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## CONTENTS

Valuation of Municipal Utilities.....	299
Chemical Precipitation Data.....	299
Repairing a Reservoir Leak (Illustrated).....	300
Valuation of Water Works Plants.....	302
Gas Rates in New York State. By Alton D. Adams.....	304
Cost of Pumping at Wilmington.....	305
Reports from Municipal Water Departments Concerning Meters	306
News of the Municipalities.....	307
Legal News—A Summary and Notes of Recent Decisions.....	312
Municipal Reports .....	313
Trade Notes .....	313
News of the Societies.....	314
Personals .....	315
The Week's Contract News.....	316
Patent Claims .....	323
Incorporations .....	323

## Valuation of Municipal Utilities

THE article on another page entitled "Valuation of Water Works Properties" should be of considerable interest, not only to those of our readers who may be required to play some part in the transfer of a private water works plant to municipal ownership, but also to those interested in similar transactions involving lighting plants or other public utilities. Moreover, in calculating the profit which a city is earning, or the rates for service which should be charged its citizens in order to yield a given percentage of profit, the value of the plant must be estimated in some way, which estimating is in many cases a most difficult matter, especially when the past financing has not been carried out upon correct business principles. Under the most honest administration of either a public or a private plant, the amounts received from the sale of stocks and bonds, less depreciation, may be more than the true value, if the funds obtained in this way have been used for maintenance or renewals; or such sum may be less than this value, as when extensions have been paid for from the annual receipts. A Water Department which is able to pay interest on its correct valuation (including payments to the city which suffice to cover inter-

est on expenditures made by it for the benefit of that department), make reasonable sinking fund deposits, pay all maintenance charges, and above and beyond this make extensions into new territory or turn a surplus into the general treasury, all out of its income, is charging unnecessarily high rates. But to determine whether this or the reverse is the case requires a correct statement of interest and of sinking fund, and it is for determining these that the principles explained in the article referred to are of value.

There are, of course, cities which conduct their water, light, and other departments on the general principle that the citizens should be charged rates similar to those in force in other cities of its size in the State, which should all go into the general city treasury, appropriations being made from the same to cover all expenses of maintenance as well as of extensions. Such cities never know what their water or light really costs them; there is no inducement to real economy of management, since it is not apparent from any figures published, or even readily ascertainable; but, on the other hand, the apparent economy obtained by avoiding expenses which should be made in order to properly maintain the plant, is invited by such conditions. As between the false economy and the lack of attempt at any economy, the former is generally the more objectionable; for it results in a dilapidated plant, which can be restored to efficiency only at great expense, while leading the citizens generally to believe that the management is most excellent.

## Chemical Precipitation Data

IN the annual report of the City Engineer of Providence, R. I., are given statistics concerning the operation for the year 1906 of the largest chemical precipitation sewage disposal plant in this country. This plant received sewage from a population of about 182,000, out of a total city population of 203,000. The sewage is described as containing, together with domestic sewage, wastes from manufacturing jewelers, wool washing and dyeing and bleaching. The total amount of sewage pumped during the year is estimated at 7,066,608,448 gallons, at a total outlay for labor, fuel, work in screen chamber and all other charges of \$17,372.49, or \$2.458 per million gallons pumped, or \$0.08116 per foot-gallons pumped. As part of the sewage is received through 9.94 miles of storm sewers, the amount during wet days was greater than during dry, last year by an average of about 6,800,000 gallons. The difference between Sunday and week day dry-weather flow is 5,507,000 gallons, which is assumed to be almost entirely manufacturing and elevator waste. The maximum flow was on December 1, 1906, when 42,556,205 gallons were pumped; and the minimum was on August 19, when 9,338,382 gallons were pumped. The average strength of this sewage, in parts per hundred thousand, was as follows: Albuminoid ammonia, total, 0.729; soluble, 0.370; suspended, 0.359; chlorine, 45.58. The chemicals were added at the rate of 637.75 lbs. of lime and 72.1 lbs. of copper per million gallons of sew-

age. The organic matter removed from the sewage, expressed in terms of albuminoid ammonia, was 43.35 total and 85.07 suspended. The volume of sludge produced amounted to 4,444.4 gallons per million gallons of sewage treated, this sludge containing 7.43 per cent. of solids. The sludge is pressed into cakes by filter presses and the cakes hauled by a narrow-gauge steam train to a dump a few hundred feet away. Sludge is pumped into storage reservoirs by two 500-gallon Shone ejectors, whence it flows by gravity to 4x12-foot forcing receivers, which force it into the presses under 60 to 80 lbs. pressure per square inch. The ejectors and forcing receivers are run by air pressure, generated by one 150-horsepower and one 50-horsepower air compressor actuated by electric motors. There are 18 filter presses, each containing from 43 to 54 plates, forming cakes 36 inches square and from  $1\frac{1}{4}$  inches to  $\frac{3}{4}$  of an inch thick. An average of 97.16 tons of sludge cake are produced daily, these cakes containing 27.7 per cent. of solids, or a total of 26.97 tons of solids. In addition to these amounts, about 4-10 of a short ton of solids per day were taken from the sewage by screening. The cost of the chemical precipitation averaged \$4.50 per million gallons of sewage treated. The electricity for lighting, heat and power costs \$7.69 per day. The sludge disposal cost \$3.10 per million gallons of sewage treated. The cost of operation per ton of solids was \$2.24.

### REPAIRING A RESERVOIR LEAK

AN exceedingly interesting piece of reservoir repair work was performed last year in Providence, R. I., by which a leak in Hope Reservoir was traced through the embankment and stopped by puddling. The work is described as follows by City Engineer Otis F. Clapp, in his last annual report:

The reservoir was drawn off in May for the purpose of cleaning, and advantage was taken of this fact to attempt to discover the source of a leak which had been in existence for over twenty-five years. The water appeared at the foot of the bank on the west or Brown street side of the reservoir, and had been taken into a pipe well, from which it was discharged into the Brown street sewer. Measurements had been kept of the discharge for many

years. Within two or three years the amount had increased somewhat, but not enough to cause alarm. Examinations had been made before, and considerable time and money had been expended, without finding any clew as to the location of the point on the inside of the bank where the water escaped. It was thought that the best way to trace the course of the water would be to follow the stream back into the bank. When the water had been drawn down so that there was a head of about one foot on the discharge, digging was commenced. Almost immediately a water channel was found, measuring from two to four inches high and from four to eight inches in width and nearly level. This was followed some fifty-four feet in open trench and then tunneling was commenced. When a point was reached about under the outer top edge of the embankment the channel divided and ran in nearly opposite directions. In the belief that we could save time, we then tried the experiment of forcing a lot of colored water back into the reservoir by way of each of these two routes, and were much surprised to have the color appear at the same point on the surface of the water in the reservoir. The reservoir was then emptied and cleaned and the tunneling was continued by way of both branches. The stone slope wall was taken down where the colored water had appeared and a hole was found several inches in diameter, which went back into the bank for several feet, where it branched and ran in opposite directions. The tunneling was prosecuted until the lines met, every effort being made to discover any side openings that might lead away, but only a few were found and those followed to the end. The material of the embankment was found to be hard and in the best of condition, only a few soft places were found, and those, all near the water course, were completely removed. The tunnel averaged about four feet high and two and one-half feet wide, just large enough for a man to work in. This tunnel was surveyed and platted, a copy of which is here inserted. The tunnel measured 251 linear feet with 54 feet of open cut. There were discovered 359 linear feet of water course in the embankment. It was not thought safe to refill the tunnel, and so that portion of the bank lying over the tunnel excavation was taken out and the embankment rebuilt. This area is shown surrounded by heavy dotted line on plan. The water channel was found to have been about on the surface of the original soil, or where the artificial work in building the embankment was begun. In repairing, the precaution was taken to go down lower in the line of the core wall, finding rock from two to five feet below where the embankment had been started before, and filling in with cement concrete. The excavation was then refilled with great care, some three car loads of Barrington clay being added to the soil taken out before replacing.

The work of repairing took about three and one-half months to perform, and no sign of any leak has since appeared at this point. Mr. Samuel M. Gray, Civil Engineer, who was resident engineer at the time the reservoir was built, was consulted in relation to the repairs. A smaller leak or spring, co-existent with the other leak, is still discharging near the corner of the reservoir and will be examined later.



GENERAL VIEW OF REPAIRS AT HOPE RESERVOIR

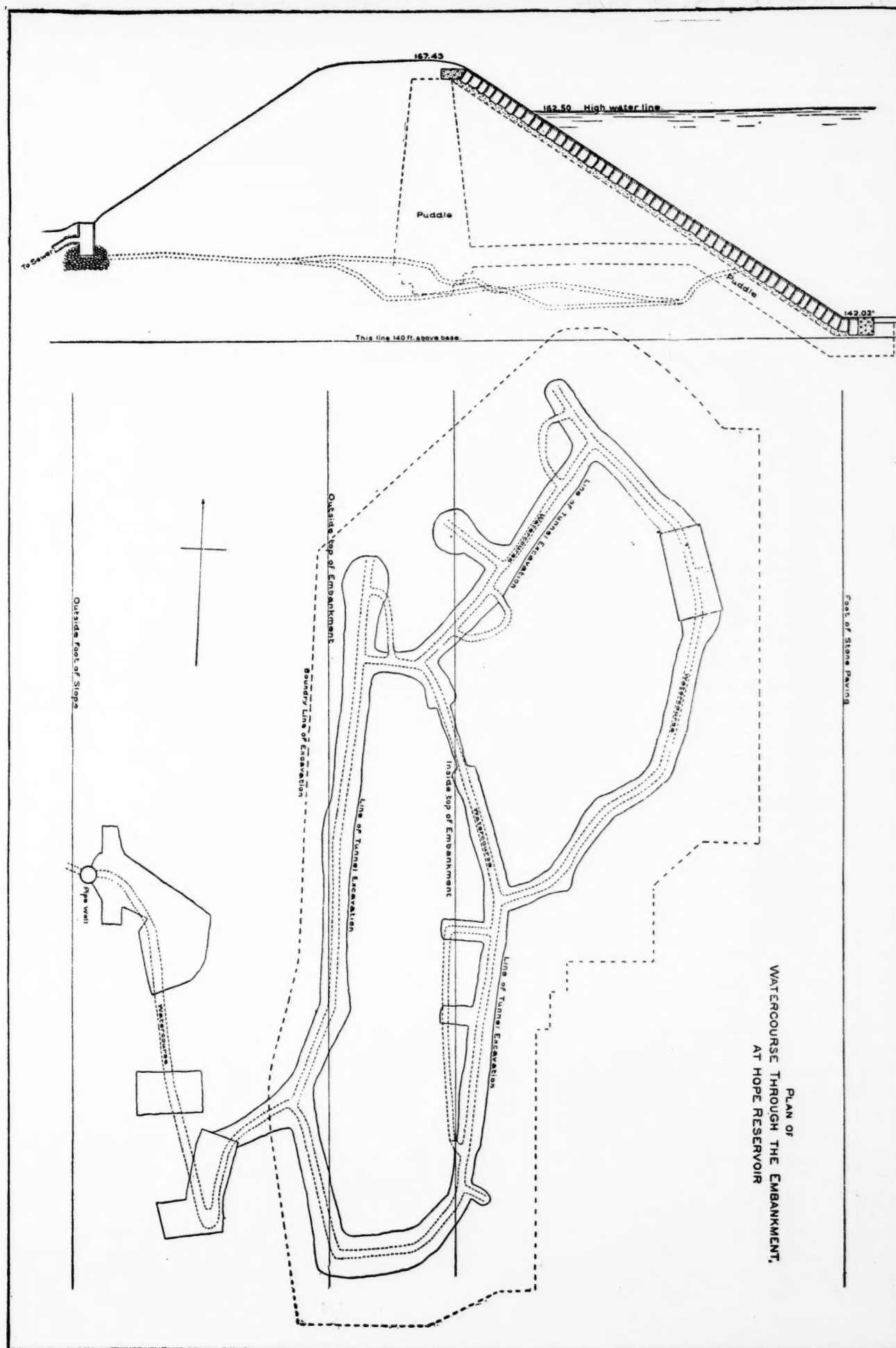


DIAGRAM SHOWING COURSE OF LEAK THROUGH EMBANKMENT OF HOPE RESERVOIR



## VALUATION OF WATER WORKS PLANTS

### Methods Used by Appraisement Boards for Determining Physical Value, Going Value and Franchise Value— Probable Life of Water Works Structures

In a paper read before the Wisconsin League of Municipalities, Mr. Charles B. Burdick, Sanitary and Hydraulic Engineer of Chicago, gave an exhaustive discussion on the valuation of water works properties which only our limited space prevents us from presenting entire, since the ideas set forth are valuable, not only in connection with the transfer of such properties—ordinarily from private to municipal ownership—but also for assisting water works' superintendents and other officials in correctly crediting the department with the value of the plant already in the city's possession.

The elements of value he classifies as: First, the physical value of the property as it exists at the time of the valuation, less its depreciation; second, the "Going Value," hereafter defined; third, the "Franchise Value," if any.

#### PHYSICAL VALUE

This is usually based upon an inventory preferably prepared jointly by the parties at issue, either directly through their appraisers or else by the owner and verified by the other party. The inventory should give the date of installation of each part of the plant, the circumstances bearing upon its depreciation, and its condition at the time viewed, set forth in detail and in shape to be readily verified, being summarized in such a manner as to permit the assignment of values with the least labor. The inventory should, therefore, be prepared by an expert in water works construction, preferably one who is also familiar with the method and practice of appraisal boards. It should also give the physical and financial history of the plant; a statement of the growth in consumption, taps and consumers, income, and operating and maintenance expenses, this information being of service in fixing the going value and the value of the franchise. This statement should cover the entire life of the plant, or as many years back as possible. Such inventory and statement can usually best be prepared by an assistant of the appraisers, whose time is less valuable than theirs.

The value of the physical property is usually based upon the cost of duplicating it under prices prevailing at the time of appraisal. In the average plant, at prevailing prices, from one-third to one-half of the physical value consists in cast-iron water mains and their appurtenances. During the past twelve years the price of iron pipe in the central west has varied between \$15 and \$40 per net ton, which, however, is an unusual variation for such a short period. From 1870 to 1876 the average price was \$50 per ton, and from 1876 to 1884 it ranged from between \$35 and \$45; from 1884 to 1890 from \$25 to \$35, and from 1890 to 1897 from \$15 to \$30. Since 1897 the price has gradually risen to about \$35 per ton. The cost of machinery to a limited extent follows that of cast-iron and the other metals employed. Although the cost of labor has increased, improved methods of construction

have more than offset this. The price of machinery was at its lowest in the late nineties, since when it has increased from 25 to 50 per cent. The cost of labor, lumber and building materials generally has been gradually increasing for ten years; but, on the contrary, heavy masonry can be built more cheaply at the present time. In consequence of these fluctuations it may rightly be judged that appraisals upon the cost-of-duplication theory may often appear unjust to one party or the other, such as appraising at \$15 per ton pipe which actually cost when laid \$30. It must be borne in mind that the buyer can fix the time of purchase within certain limits, which cannot be done by a seller having a contract to sell at the option of the prospective purchaser.

#### DEPRECIATION

As applied in water works valuation this means the falling in value or reduction of worth of the property, as compared to new property similar to it in essential respects. It may be caused by use, wear, lack of care, actions of elements or of soil, all tending to a lessening of usefulness. The fact that a machine is not well adapted to the work, or advancement due to new inventions are further elements of depreciation, since, although in good order, a machine must be considered of lessened value if a newer one can perform the work more cheaply and better.

So durable is cast-iron pipe that its use for a period of more than one hundred years has not been sufficiently lengthy to demonstrate its ultimate life. Uncoated cast-iron pipe has been in service for that length of time, and modern pipe coatings appear to furnish almost perfect protection, although there are certain soils and waters, rarely met with however, whose chemical qualities cause the pipe to be rapidly destroyed. Electrolysis is a source of danger, but it is known that this danger is confined to a small part of the system and, furthermore, may be largely avoided by proper bonding in the electrical construction. Certain waters produce tubercles or incrustations upon the interior surfaces of pipes, thus reducing their capacity, usefulness and consequent value; but with the increasing use of cleaning appliances, there need in the future be little depreciation from this cause.

Reservoirs of masonry or earth, when properly constructed and maintained, are almost indestructible, and their depreciation is usually confined to coverings or minor features. Steel reservoirs, stand-pipes or riveted tanks have a much shorter life. Many stand-pipes are now twenty to thirty years old, and, although some of them are in fairly good condition, a number have been taken down as dangerous, have been destroyed by accident, or have been displaced through life or capacity. Buildings usually depreciate by being outgrown rather than by actual deterioration. Pumping machinery has a durable life, and is more often replaced from lack of capacity than for any other reason. Good machines are now operating after fifty years of service, and it is probable that such, well maintained, can give



good service for a very long period; even when no longer economical, they may have a considerable value as a reserve.

In assigning the depreciation to any particular case local conditions must be considered; but while it is, therefore, impracticable to make any close general estimate on the life of water works structures, the periods ordinarily assigned by appraisal boards have closely approximated the following:

#### ORDINARY LIFE OF WATER WORKS STRUCTURES

Well-coated cast-iron pipe and specials.....	75 to 100 years
Wrought-iron pipe, well coated.....	25 to 50 "
Hydrants and valves.....	50 to 75 "
Buildings .....	25 to 50 "
Reservoirs .....	50 to 100 "
Standpipes .....	25 to 50 "
Pumping machinery.....	15 to 50 "
Boilers .....	10 to 20 "
Electric machinery.....	25 to 50 "

It seldom happens that depreciation is uniform throughout the life of a structure. A pumping engine, for instance, a few years after its installation, while its capacity is still ample for all purposes and has been operated for a sufficient length of time to insure that it is substantially built and fitted for its service, may be considered as fully as valuable, if even not more so, as when first installed. In most structures depreciation is slow during early life and rapid toward the end of existence.

Mr. Bennezette Williams, in making the Sheboygan appraisal in 1900, suggested the use of sinking-fund methods in computing depreciation of water works, and this has been adopted by most appraisal boards since then. To illustrate this plan: Let us assume Mr. Smith pays \$1,000 for a machine whose life is fixed at twenty years; knowing its life, there can readily be computed the annual addition to the sinking fund which, at compound interest (say 3 per cent), will replace the machine at the end of its life; if, at the end of ten years, Smith sells the machine to Jones, agreeing to turn over with it the accumulation of his sinking fund to date of sale, Jones can afford to pay the original purchase price of the machine, \$1,000, the accumulation of the sinking fund having made good such depreciation in the machine as has taken place prior to the transfer; Jones having in addition the scrap value of the machine, whatever that might be at the end of life. This method is used in computing depreciation upon the so-called sinking fund, or curved-line basis. It brings practice and theory together, in that a reasonable assumption as to the life of a structure may be made, and a result reached in accord with experience in that the depreciation during the early years if life is small, increasing more rapidly as the end of life is approached. In applying this method it is customary to determine the proper annual sinking fund, and compute and deduct from the cost of duplicating the structure the accumulation of the sinking fund to date. If desired, the scrap value may be deducted from the cost of duplication; but as the scrap value of most water works appliances is small, this refinement is not ordinarily introduced in the appraisal of such.

#### GOING VALUE

Our courts have held in several important cases, where a city compels a company to part with its property, that in appraisal consideration shall be given to the value it has from the fact that it is in operation, is doing business and earning revenue, this element being somewhat analogous to the so-called "good will" in transferring business properties. The justice and equality of this element of value were clearly decided in the case of the National Water Works Company of New York vs. Kansas City, sustained in appeal to the United States Court of Appeals. The Supreme Court of Massachusetts also awarded the Newburyport Water Company \$40,000 for the going value of its property when purchased by the City of Newburyport. To Mr. Bennezette Williams belongs the credit of suggesting a rational method of computing this element of value also. The Dubuque Board of Arbitrators gave the following definition: "Good Value consists of the element of earning power which a plant possesses, growing out of its having an assured business, in excess of what a new plant started without any business would have, and is measured by the sum the yearly amount of revenue reduced to the present value of such plant in operation will produce in excess of what new works of a like character can be made to produce between the time of purchase and that time in the future when the revenues of the two works become equal, proper allowance being made for difference in cost of maintenance." In applying this method an estimate is made of earnings from domestic sources only, and the operating expenses of the old plant during a period of years subsequent to the date of appraisal. An estimate is made of the length of time required to construct a new plant substantially like the old, varying from one to three years, depending upon the magnitude of the property. The probable income of the new plant over a period of years subsequent to its completion is estimated, supposing it to start without consumers and that business grows at a reasonable rate until the revenues of the new and old plants are equal. The operating expenses of the new plant must also be computed during this period, the length of which has been variously estimated at from six to twelve years. The old works are then credited with their earnings from the date of appraisal to the time when the earnings of the two plants are equal; also with the hydrant rental during the construction of the new plant. It is debited with the domestic earnings of the new plant up to the time the earnings of the two are equal; with the difference in operating expenses between the new plant and the old; and with the difference in interest during the period of construction of the new plant as compared with the interest of the old plant during the same period. The total debit deducted from the total credit for each year to the time of equal revenues gives the annual Going Value, and these annual Going Values reduced to the present worth at a reasonable rate of interest (5 per cent. is commonly used) gives the present Going Value. This value is not an entirely fictitious one, since in the case of most

plants it represents money actually expended in building up the business.

#### FRANCHISE VALUE

The franchise is the company's right to exist and transact business, without which its operation may not continue. A franchise, therefore, has value. In a large majority of the cases considered, however, the franchise is practically valueless because of having expired or being about to expire. Many franchises contain provisions that the franchise value shall be waived in the event of purchase by the city. Moreover, a franchise which fails to show sufficient net earnings over and above operating expenses, interest and sinking fund charges sufficient to retire the property at the end of the franchise is of nominal value only. This question, therefore, does not often arise. For determining franchise values, one method which has been used is to estimate the gross earnings of the property during the remainder of the franchise life, deduct from the yearly gross earnings the operating expenses, including maintenance, taxes, etc., and also the annual contribution to the sinking fund which will retire the property at the end of the franchise. If a credit balance remains, these credits are reduced to their present worth and added, giving a sum which, if the assumptions have been proper, fixes the reasonable value of the franchise. Franchise values have been affected by the ruling of several courts that municipalities can fix reasonable water rates, but the courts have held that such rates must allow a profit which would reasonably warrant the hazard of the investment. The writer believes that from 2 to 4 per cent. profit over and above all ordinary charges, including interest, should not be considered unreasonable, this giving the investor from 7 to 9 per cent. where interest was figured at 5 per cent.

### GAS RATES IN NEW YORK STATE

Figures Concerning Plants Selling More than Twenty Million Feet in 1905-1906—Lighting and Heating Rates in Greater City and Outside

BY ALTON D. ADAMS  
Gas and Electric Expert, Worcester, Mass.

FIFTY gas plants sell from 20,000,000 to more than 13,000,000,000 feet of gas each annually in New York State. Of these plants, nineteen operate in Greater New York and thirty-one in the remainder of the State, and it is convenient to group the plants according to this division for purposes of comparison.

Ten plants within the city and eight plants outside sold more than 100,000,000 feet of gas each, during the year ending June 30, 1906. For the more ready comparison of prices the plants of each group are arranged in the order of the volumes of gas sold. Outside of the city the largest volume of gas sold appears to have been the 675,465,100 feet at Rochester, but the Consolidated Company sold 13,366,223,442 feet in Greater New York.

As the figures for sales of gas by the Consolidated, New Amsterdam, New York Mutual and Standard com-

panies, in Greater New York, and by the plants at Buffalo, Albany and Middletown are not available for 1906, the figures given are for the year ending June 30, 1905. It is therefore probable that the number of feet sold in each of these cases, during the year of 1906, was larger than shown in the tables. Figures for sales do not include those between gas companies.

The gas rates shown for each case are those that were in force on June 30, 1906, and a number of these rates have been reduced since that date, as will be shown. Net lighting rates show the highest prices that private consumers must pay for gas if they take advantage of the discounts for prompt payment, and the same is true for net heating rates, when the gas is used for heating. In many cases large consumers get much lower rates than those shown, and at some plants the rate for gas used in engines is lower than that for gas used in heating.

In Greater New York each plant is indicated by a part of the name of the company that owns it, and in the remainder of the State each plant is indicated by its location. The Westchester Company operates both inside and outside of the city, but as the greater part of its product is probably sold in Greater New York it has been included with that group.

About one-third of the plants outside of the city sell gas at lower rates for heating than for lighting, and this is also true of at least one plant in Greater New York. At Saratoga Springs this difference amounts to 50 cents, and at Plattsburgh to 40 cents, in favor of gas used for heating, per 1,000 feet. This discrimination is simply one form of the practice of charging "what the traffic will bear."

Among the plants entirely in Greater New York the highest net lighting rate is that of \$1.60 per thousand feet charged by the Queens Borough Company, which sold 61,699,000 feet of gas during the year in question. In the remainder of the State the highest net rate charged by a plant selling not less than the volume of gas just named was that of \$1.50 per thousand at Newburgh, where 63,300,400 feet was sold. The next highest rate for plants selling not less than the volume of the Queens Borough Company was that of \$1.30 per thousand, as charged at Gloversville and Johnstown, with sales of 70,635,300 feet, at Utica with 166,850,600 feet, and at Albany with about 400,000,000 feet. Outside of New York City the highest net rate was \$1.80, at Plattsburgh, where 22,204,500 feet was made, corresponding probably to a sale of more than 20,000,000 feet, and this was also the highest rate for the entire State, among plants that sold not less than 20,000,000 feet.

The lowest rate for the entire State was that of 80 cents per thousand feet, in force for the Flatbush Company that sold 212,263,600 feet, and for the Brooklyn Union Company that sold 6,536,177,360 feet. Outside of New York City the lowest rate was 95 cents, charged at Syracuse, where sales amounted to 364,385,500 feet. While the Central Union, Northern Union, Consolidated, New Amsterdam, N. Y. Mutual and Standard companies charged \$1 per thousand for their gas, their rate fixed



by statute to take effect May 1, 1906, was 80 cents per thousand, and since that date 20 cents per thousand feet has been deposited under the control of the United States Circuit Court, pending a final decision of the claim of the companies that the statute violates their rights under the Fourteenth Amendment of the Federal Constitution. As matters now stand, the Consolidated company, with its sales of 13,366,223,442 feet, and the Woodhaven company that sells only 43,285,464 feet, both collect the same rate.

Since June 30, 1906, the rates of the Buffalo, Albany, Watertown and Saratoga Springs plants have been reduced. At Buffalo and Saratoga Springs the reductions were ordered by the Commission of Gas and Electricity, the rate fixed for Buffalo being 95 cents and the rate for Saratoga Springs at \$1.45 per 1,000 feet. At Saratoga the new rate does not take effect until next September. The Albany company stayed a complaint before the above Commission as to the price of gas by a court injunction, and the Legislature thereupon reduced the Albany rate to \$1 per thousand, with very little ceremony. While a complaint as to the price of gas at Watertown was pending before the Commission, the city and the company there reached an agreement on the basis of a net lighting rate of \$1.25 per 1,000 feet.

After these reductions the only plants in the State that sell more than 100,000,000 feet annually and charge more than \$1 per thousand for gas are those at Troy, Schenectady, Utica, Binghamton and the New York City plants of the Brooklyn Borough, N. Y. & Richmond and the Westchester companies. The highest rate among these plants is that of \$1.60 at Tuckahoe, and the next is \$1.40 per thousand at White Plains, both of which places are served by the Westchester company. This company sells gas in Mount Vernon and the Bronx at \$1 per thousand, while charging as much as \$1.60 elsewhere, and its operations form the most important, if not the only, example in the State of a corporation that charges different rates in different places.

Apart from the Westchester company, the largest rate charged for gas by a company that sells more than 100,000,000 feet is \$1.30, at Utica, where the output was 166,850,600, but Binghamton follows with a rate of \$1.25 per thousand, and sales of 137,250,300 feet.

Five plants that sell less than 100,000,000 feet of gas each have maximum net lighting rates of \$1, and four of these plants sell less than 50,000,000 feet each per year. Allowing for the coming reduction at Saratoga Springs, only three of the plants outside of New York City that sell less than 100,000,000 feet of gas have net rates above \$1.50 per thousand. These plants, Plattsburgh, Glens Falls and Niagara Falls, charge \$1.80, \$1.75 and \$1.70 per 1,000 feet, respectively. The above figures are intended to cover all plants that sell coal or water gas to the volume of 20,000,000 feet or more annually in New York State.

Except as to the reductions named in certain places, the figures for sales and rates are taken from the report of the New York Commission of Gas and Electricity, dated January, 1907. It does not appear that there are any municipal plants selling coal or water gas in the State.

## SALES AND PRICES OF GAS IN GREATER NEW YORK

Company—	Feet Sold, Year of June 30, 1906.	Net Lighting Rate Per M. Feet.	Net Heating Rate Per M. Feet.
Consolidated ....	13,366,223,442	\$1.00	\$1.00
Brooklyn Union..	6,536,177,360	.80	.80
New Amsterdam..	2,494,727,800	1.00	1.00
Standard .....	2,035,716,800	1.00	1.00
N. Y. Mutual....	1,827,317,600	1.00	1.00
Central Union...	1,024,811,900	1.00	1.00
Westchester ....	874,415,130		
In the Bronx....		1.00	1.00
In Mount Vernon		1.00	1.00
In Yonkers.....		1.00	1.00
In New Rochelle..		1.20	1.20
In White Plains..		1.40	1.40
In Tuckahoe ....		1.60	1.60
Northern Union..	382,046,600	1.00	1.00
Flatbush .....	212,263,600	.80	.80
Kings County....	207,999,600	1.00	1.00
Newtown .....	177,926,633	1.00	1.00
N. Y. & Richm'd..	161,771,600	1.15	1.15
Brooklyn B'rg'h..	101,698,900	1.25	1.25
N. Y. & Queens..	82,878,800	1.25	1.25
Queens Borough..	61,699,000	1.60	1.40
Bronx .....	54,357,000	1.10	1.10
Jamaica .....	51,585,186	1.00	1.00
Rich'd & Queens	46,195,694	1.00	1.00
Woodhaven .....	43,285,464	1.00	1.00

## SALES AND PRICES OF GAS OUTSIDE OF GREATER NEW YORK

Location—	Feet of Gas Sold	Net Rate Per M. Feet Lighting	Net Rate Per M. Feet Heating.
Rochester .....	675,465,100	\$1.00	\$1.00
Buffalo .....	556,000,000	1.00	1.00
Albany .....	400,000,000	1.30	1.00
Syracuse .....	364,385,500	.95	.95
Troy .....	248,642,500	1.25	1.00
Schenectady ....	177,147,100	1.20	1.20
Utica .....	166,850,600	1.30	1.00
Binghamton ....	137,250,300	1.25	1.25
Auburn .....	83,476,100	1.13	1.13
Gloversville and Johnstown ....	70,635,300	1.30	1.30
Poughkeepsie ...	73,784,000	1.20	1.20
Newburgh .....	63,300,400	1.50	1.00
Watertown .....	61,203,000	1.50	
Tonawanda .....	57,255,900	1.50	1.20
Amsterdam .....	62,595,100	1.00	1.00
Kingston .....	47,632,400	1.15	1.15
Geneva .....	43,231,900	1.25	1.25
Saratoga Sp'ngs..	43,040,800	1.75	1.25
Ithaca .....	38,416,600	1.50	1.30
Cohoes .....	35,867,000	1.37½	
Lockport .....	37,742,500	1.00	1.00
Rome .....	31,932,600	1.20	1.20
Little Falls, Her- kimer & Illian..	29,283,900	1.30	1.30
Oswego .....	24,424,200	1.25	1.25
Peekskill .....	23,587,100	1.50	1.50
Niagara Falls....	23,263,600	1.70	
Glens Falls.....	24,457,900	1.75	1.50
Elmira .....	20,892,200	1.50	1.10
Homer & Cortland	20,179,500	1.50	
Middletown ....	20,000,000	1.25	1.25
Plattsburgh .....	22,204,500 (made)	1.80	1.40

## Cost of Pumping at Wilmington

The cost per million gallons of pumping by the Wilmington, Del., water works during 1906, by five pumping engines, was as follows: Corliss pump, 122-foot head—Labor, \$2.13; coal, \$2.25; supplies and repairs, \$0.08; light, \$0.06. Worthington pump, 122-foot head—Labor, \$3.63; coal, \$2.90; supplies and repairs, \$0.31; light, \$0.12. Water-power pump, 122-foot head—Labor, \$0.68; supplies and repairs, \$1.11; light \$0.03. Snow pump, 117-foot head—labor, \$4.57; coal, \$2.48; supplies and repairs, \$0.21; light, \$0.15. Remington pump, 117-foot head—Labor, \$5.64; coal, \$3.12; supplies and repairs, \$0.25; light, \$0.18.



## REPORTS FROM MUNICIPAL WATER DEPARTMENTS CONCERNING METERS

Compiled by S. Y. High, Superintendent Water Department, Kansas City, Mo., April, 1907

CITY AND STATE	Population	Daily Consumption	Average per Capita	Meter Rate Per 1,000 Gallons	How Payable	No. of Services	No. of Services Metered	How Meters are Furnished to Consumers	Charge to Consumers For Installing	Charge to Consumers for Boxing Outside of Building
Atlantic City, N. J.	Winter, 37,000 Summer, 125,000 1905	5,194,000 7,298,000	138 58	12c. to all.....		5,327	4,100	Free.....	None.....	None.
Boston, Mass.....	600,000	83,000,000	138	Min. consum. \$15 per an. Highest.....18 2-3c Lowest.....10 2-3c	Qu'rt'ly..	93,091	5,119	Free, except on emergency pipes.	None.....	None.
Baltimore, Md. (a)	1903 531,313 1905	65,000,000	122	6c for first 22,500 gals.; 2c for additional.....		110,000	3,500	Free.....	Actual cost plus 10%	None.
Buffalo, N. Y.....	420,000	125,000,000	300	Min. consumers \$7.00 per annum. Lowest.....13 1-3c Min. consumers \$3.00 per annum.		70,585	2,115	Consum. pay cost of labor and mat'l making connect'n.	None.....	Cost of labor and material
Brockton, Mass...	1905 50,000 1906	2,000,000	40	Min. consumers \$3.00 per annum. Lowest.....6c Highest.....10c		6,820	6,210	Rental \$1 per annum for etc....	None.....	None.
B'tle C'k, Mich (b)	26,000	1,226,000	47	Min. consumers \$2.50 per annum. Lowest.....51c Min. consumers \$5.00 per annum.	Monthly	3,885	3,438	Rental: 10c per month. 12c per month.	Consumers pay plumbers.	Brick pits p'd for by consumer.
Chicago, Ill.....	1905 2,000,000 1906	375,000,000	187	Min. consumers \$2.50 per annum. Lowest.....51c Min. consumers \$5.00 per annum.		225,000	12,000	Free.....	None.....	None.
Cleveland, Ohio...	444,000	61,572,000	138	Min. consumers \$2.50 per annum. Lowest.....51c Min. consumers \$5.00 per annum.	Semi-an.	69,128	56,685	Free.....	None.....	None.
Cambridge, Mass...	1906 99,934	9,277,000	92	Min. consumers \$2.50 per annum. Lowest.....51c Min. consumers \$5.00 per annum.		15,062	2,935	Free.....	None.....	None.
Camden, N. J. (c)	1905 90,000 1906	1,300,000	145	8c to all.....		16,000	584	Free.....	None.....	None.
Detroit, Mich....	377,532	61,357,000	162	First 30,000 gallons or less \$1.75, all in excess at.....21c Min. consumers \$4.40 per annum.	Qu't'ly..	73,699	6,346	Free.....	None.....	None.
Dayton, Ohio.....	1905 100,000	7,500,000	75	Lowest.....6c First 25,000 gallons.....20c Additional.....4c	Qu't'ly..	19,026	13,720	Rental \$2 per an....	\$1.00.....	Meters not allowed outside.
Erie, Pa.....	1905 65,000 1906	10,500,000	161	Min. consum'rs \$3 per an. Highest.....10c Lowest.....61c	Monthly	12,588	277	Rental: 10c per month. 15c per month.	None.....	Meters not allowed outside.
Ft. Wayne, Ind...	1903 60,000	4,500,000	75	Min. consumers \$7.00 per annum. Lowest.....51c		10,000	3,300	Rental \$2 per an....	\$1.90.....	Cost of labor and material.
G'd Rapids, Mich.	1903 93,679	14,000,000	149	8c to all.....	Monthly	15,000	5,000	Free.....	None.....	None.
Hartford, Conn...	1906 100,000	6,150,000	61	2,800 g. or less pr. m., 70c Highest.....25c Lowest.....71c	Monthly	10,623	10,137	Free.....	None.....	None.
Kansas City, Mo..	300,000	20,000,000	66	Min. consumers \$12 per annum. Lowest.....9 1-3c Min. consumers 10c per day.		32,210	12,540	City owns about 1300.....	Consumers pay plumbers	Cost of labor and mat'l.
Los Ang'l's, C'l, (d)	1903 116,420	20,000,000	172	Min. consumers \$10 per an. Highest.....20c Lowest.....131c		51,000	17,850	Free.....	None.....	None.
Louisville, Ky....	1903 215,722	18,000,000	83	Min. consum. \$10 per an. Highest.....20c Lowest.....131c	An. in ad	29,154	2,186	Sold to consumers for cost.....	Cost of labor and material.	Cost of labor and mat'l.
Lynn, Mass. (e) ..	1903 72,350	5,500,000	76	Min. consum. \$10 per an. Highest.....121c Lowest.....8c	Qu't'ly..	18,953	4,500	Free.....	None.....	None.
Manchester, N. H.	1906 60,845	3,500,000	57	2,500 g. or less pr. m., 70c Highest.....10c Lowest.....6c	Monthly	6,300	2,709	Free.....	None.....	None.
Memphis, Tenn...	1906 160,000	12,500,000	78	To all.....161c Rebate of 5% in quan. of 374,000 gals. per mo....	Monthly	15,000	3,000	Free.....	None.....	None.
Portland, Ore....	1904 100,000	20,000,000	200	Min. consum. \$12 per an. Highest.....20c Lowest.....6c	Monthly	25,219	4,035	Sold to consumers for cost.....	Pays all costs..	Pays all costs.
Pittsburgh, Pa. (f)	1903 345,043	67,500,000	195	Min. consum. \$12 per an. Highest.....20c Lowest.....6c	Qu't'ly..	42,000	6,300	Free.....	None.....	None.
Rock Island, Ill...	20,000	3,400,000	170	Min. of 60,000 g.pr.an.\$18 Highest.....30c Lowest.....121c	An.in ad.	4,000	530	Free.....	None.....	None.
Quincy, Mass....	1903 26,053	2,600,000	100	Min. consum. \$4 per an. Highest.....15c Lowest.....5c	Semi-Annual	6,000	850	Free.....	None.....	None.
Richmond, Va....	1906 100,000	13,000,000	130	First 1,000 gals.....40c Lowest.....3c		17,400	8,700 in all City o'ns 7,500	Free up to 1 in., all larger at cost.....	No cost up to 1 in. Others set at curb.	All meters set at curb.
Reading, Pa.....	1903 91,080 1905	11,384,000	122	14c. to all.....	Monthly	10,900	1,495	Free.....	Installed by consumer.	Cost of labor and mat'l.
Rochester, N. Y..	181,670 1903	15,563,000	85	Min. consum. \$9 per an. Highest.....25c Lowest.....6c		35,364	19,627	Sold to consumers for cost.....	None.....	Cost of labor and mat'l.
Springfield, Ill. (g)	36,211	4,500,000	124	8c to all.....	Monthly	5,359	604 in all City o'ns 416. 5,000 o'ly part o'n-ed by city	Free..... (Nearly all be long to consumers.) Rental.....\$2.50.....	Cost of labor and material.	Cost of labor and mat'l.
St. Louis, Mo....	1906 700,000	69,000,000	98	Highest.....10c Lowest.....5c 47 mills per 1,000 g. to all.	Monthly	85,000	23,471	Deposit for amt. of cost.....	None.....	None.
St. Paul, Minn...	1903 172,038	9,000,000	52	Min. consumers \$6.00 per annum. Lowest.....8c Min. consumers \$10 per annum.	Qu't'ly..	11,500	2,875	Free.....	None.....	None.
Salt Lake, Utah..	1903 57,138 1906	15,000,000	262	Min. consumers \$3.50 per annum. To all.....3c		16,878	4,084	Free.....	None.....	None.
Somerville, Mass.	68,090	6,000,000	89	Free for residences only.....		58,329	3,780	Cost for all except resid'c's.	None.....	None.
Wilmington, Del.	1905 84,000	8,000,000	95							
Washington, D. C.	300,000	65,000,000	217							

(a) All properties in the city are now or will be metered, except private houses, small stores and small saloons. Meters repaired without expense to consumer. (b) Have been very successful in the use of meters with no opposition. All new services and those changing must be metered. (c) Our waste is so great we are considering the adoption of meters throughout. (d) With only 35 per cent. of the taps metered the per capita consumption has been reduced at least 40 per cent. (e) We sell meters as follows: 1/2-in., \$16; 3/4-in., \$21; 1-in., \$26; 1 1/2-in., \$36. (f) Up to March 15, 1906, meters were furnished and installed by city free; since that time consumers pay all costs. (g) We are metering all business houses and manufacturing plants; all residences and other places where water is wasted should be metered.

## NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

### Roads and Pavements

COLORADO SPRINGS, COL.—The City Council has passed an amendment to the curb ordinance eliminating that clause requiring the consent of the owners of 51 per cent. of the property in any block before a curb line can be established. The ordinance permits any property owner to extend the curb line to the limits set forth in the curb ordinance, without consulting his neighbors. This would tend to make the streets extremely irregular in many parts of the city, but for the fact that as soon as a curb is extended to the limit in front of property in any block, the City Council will establish a ditch line even with the curb by digging a furrow, or ditch, flush with the ends of the curbstone to both corners of the block. This will thus regulate the width of the street, even though the Council has no power to compel the other property owners in that block to put in a curbstone.

DETROIT, MICH.—Alderman Watson, who has been inspecting creosoting plants in the principal cities of the United States, states that he believes Detroit should have a municipal creosoting plant for the manufacture of paving blocks. Commissioner J. J. Haarer, of the Department of Public Works, estimates that such a plant would cost about \$10,000. He has decided to recommend to the Council the sale of the portable asphalt plant and the erection of a stationary one. He thinks the portable equipment would realize about \$9,000 and the new one would cost \$15,000.

NEW YORK, N. Y.—Hereafter, when it is necessary to repair or repave within the area for which railway companies are liable, as well as the roadway outside of such area, two contracts independent of each other will be made—one for the portion for which the railway is charged, in which no time guarantee or maintenance clause will be inserted, and the other for the remaining part of the roadway, which will contain the ordinary guarantee clause, as well as a provision holding the company responsible for any loss caused the city as the result of negligence in maintenance of the roadway. By this plan the officials think the city may be saved many thousands of dollars annually, heretofore paid in suits brought to recover for injuries sustained by reason of the defective condition of public roadways.

PORTLAND, ORE.—The Street Committee of the City Council has recommended an ordinance providing that a liberal amount of lamp black be placed in all cement used in the construction of sidewalks, which will make the concrete a dark slate color and do away with the glare from sidewalks on sunny days, which is said to be injurious to the eyes of children. Dr. Victoria L. Hampton and Councilman Cattel are the originators of the ordinance, which is similar to one recently passed in Los Angeles, Cal., where the plan has proven satisfactory. City Engineer Taylor said that the lamp black would cost a nominal sum, that it would in no manner affect the durability of the concrete, and that two pounds of the coloring material should be used to a barrel of cement.

READING, PA.—Messrs. Fink, Hunter, Essick and Shoffer, members of the Board of Public Works, accompanied by City Engineer Beard and City Clerk Weidner, have made an inspection of the city's paved streets. All asphalted streets were looked after and special attention was paid to those now being treated with tarvia, a new material for street paving.

TOLEDO, O.—The Board of Public Service recently invited Manager Louis Beilstein to call in reference to the bad condition of the pavements on several streets whereon are car tracks. Manager Beilstein explained that the company was doing what it could to remedy existing conditions and expected before snow flies to relay its tracks and repair the pavement on all streets ordered repaired by the city. "We have from 250 to 300 men laying new tracks and repairing pavements this summer, and are doing three times as much along this line as in any previous year," said Beilstein. "We have orders in for new rails and are laying them as fast as the shipments arrive. I contemplate no delay in getting steel for Summit avenue, though there may be some." In order to make some showing to Council, the Servers asked the Rail-Light to put in writing just what it intended to do in regard to carrying out the provisions of its franchise, and this is now being prepared.

WASHINGTON, D. C.—Capt. Jay J. Morrow, Engineer Commissioner; Capt. Edward Markham, Assistant Engineer Commissioner; Julian O. Hargrove, Inspector of Cements and Asphalts for the District, and L. R. Grabill, Superintendent of County Roads, recently visited Montclair, N. J., to investigate the subject of treating roads with hot tar as a dust and mud-preventive. The Commissioners have abandoned the method of treating macadam roads in and about the city with crude oil, and Julian Hargrove, the Inspector of Asphalts and Cements, studied the possibilities of using hot tar. This method of treatment found its origin in France more than eight years ago, and claimed attention as offering a cheap and practical method of treatment. Mr. Hargrove experimented with a few barrels of the tar on a road in Anacostia, and he has predicted its success ever since. Climatic conditions have a good deal to do with the success of this method of treatment, and the roadbed and the surface has to undergo a careful treatment before the tar is applied.

WATERBURY, CONN.—City Engineer Robert A. Cairns says one of the most serious effects of prolonged dry weather is to be found in the partial disintegration of macadam roads. This is caused by the evaporation of the natural moisture, which leaves no binder to hold the particles of dust and broken stone together, and the result is that the larger stones work up to the surface. This can only be prevented by frequent watering. Under ordinary conditions with normal rainfall a good macadam road will take care of itself, for the rainfall will furnish sufficient moisture to act as a binder. Add to the lack of rainfall the heavy amount of traffic over the so-called trunk lines, increasing with the growing use of the motor car, and it is only a matter of time when macadam roads will be found in very poor condition, with the bare possibility of the city being obliged to rebuild sections of them entirely.

### Sewerage and Sanitation

DAYTON, O.—The old Longworth street sanitary pumping station for the purpose of protecting the city during high water, has been rebuilt and fitted with three automatic electric pumps, with provisions for an additional pump, and is ready for operation. As now equipped, the station will, during high water, when the sewer gates are closed, be capable of discharging from



the sanitary sewers over the levee, and into the river, 13,500 gallons per minute. The station was originally built in 1891, and fitted with a steam pump, which was used, but soon proved inadequate, and finally fell to pieces.

McKEESPORT, PA.—The local Board of Health has enacted a number of new laws which prohibit spitting on sidewalks, floors of halls, theaters, railroad stations, street cars and trains; the throwing of banana peels, peanut hulls, raper, etc., on the street, the shaking of carpets on fire escapes and out of windows, the cleaning of horses in streets and alleys, and merchants giving away boxes will be held responsible for the paper and refuse which falls out of them on the street; horses will not be allowed to stand in front of any buildings more than sixty minutes unless the consent of the property owner is obtained; all earth, sawdust, ashes, manure, malt, paper, etc., must be hauled through the streets of the city in tight wagons; the street car companies will be required to drain water off their tracks, and will also be required to provide some means of relief for the dust nuisance; the throwing of garbage and refuse on trains is prohibited as well as consuming refuse in public buildings; fresh meat, fish or fowl offered for sale must not be displayed outside the stores, but must be kept inside, and not unnecessarily exposed; all outside closets must be sewered where there is any possible way of making a sewer connection.

BOSTON, MASS.—Recent changes in the State laws place upon each citizen the responsibility of notifying the Board of Health in the city or town in which he resides of the presence of a contagious disease in his family or house. The following diseases have been declared dangerous to the public health, and therefore notifiable: Actinomycosis, Asiatic cholera, cerebrospinal meningitis, diphtheria, glanders, leprosy, malignant pustule, measles, scarlet fever, smallpox, tetanus, trichinosis, tuberculosis, typhoid fever, typhus fever, varicella, whooping-cough, yellow fever.

RAHWAY, N. J.—Common Council has received a communication from City Attorney F. V. Dobbins stating that the State Sewerage Committee has approved plans submitted on behalf of the Township of Westfield, providing for a change in the location of the discharge of the effluent from the Westfield sewage disposal plant to a point on the Robinson branch of the Rahway River, near the Madison Hill road. The Board directed the City Attorney to use every effort to prevent the plan as suggested from being put in operation, as it would make the stream below the dam nothing less than a sewer bed. Council contends that the sewerage should be carried to tide water, and it will be content with nothing less.

SAN JOSE, CAL.—Council has passed an ordinance regulating the sale of milk and cream, which provides that dairies must be models of cleanliness; that cows must be given the tuberculin test; that diseased animals must be destroyed, and that cans and other receptacles must be kept in a sanitary condition. Milk must have at least three and one-fifth per cent. of butter fat, and cream not less than twenty per cent. If, however, skimmed milk is sold, the cans must be plainly marked so that no deception is possible. In order that responsibility may be placed, it will be unlawful to sell milk without a license. The penalty for violating the ordinance is a fine not exceeding \$100 or imprisonment not exceeding thirty days.

#### Water Works

JOLIET, ILL.—The new city well is giving a flow of a half-million gallons. Work upon it was begun about December 15. The test will be continued for several days, and if the flow continues the well will be placed in shape for permanent use. Should the flow show any signs of decreasing the well will be drilled deeper, but

that, at the present time, is not anticipated. The water was pumped at the rate of hundreds of gallons per minute into a tank, thence it ran into the sewer. Unless the half-million standard is maintained the drilling will be continued into the Potsdam vein in the hope that more will be had there. The well casing is eight inches in diameter. Considerable air was pumped in the original test. The idea of segregated wells is said by engineers to be the only solution of the water supply problem here.

LAMBERTON, MINN.—The village is without a water supply, as the village well has been unsatisfactory all the spring and summer, and on investigation it was found that it had filled up for about half its depth with quicksand. Attempts have been made to clean it out, but so far they have proved unavailing, the well filling up as rapidly as it was cleaned out. At present it is hard to state when the water will be turned on again. Previous to this the village has had an unfailing supply of fine water from this well, which was only seventy feet in depth.

LAWRENCE, MASS.—Divers will probably be employed to repair the break in the 12-inch water main which crosses the Merrimac river, now leaking at the rate of 1,000 gallons per day. The main was cracked about a year ago, presumably by the sudden stopping of an engine, and at that time a diver was employed to "jacket" the pipe.

MT. KISCO, N. Y.—I. M. De Varona, Chief Engineer of the Department of Water Supply, Gas and Electricity, of New York City, has consulted with President Turner, of the village of Mount Kisco, and as a result the plans prepared by the department for the termination of the pollution of the sources of the city's water supply in that part of the Croton watershed were approved by Mr. Turner and the other officials who were present with him. Mr. De Varona expects the plans when completed to serve as a safeguard for that part of the water supply for at least twenty years. They include the building of a disposal system, of the type that has been adopted with success here and abroad in somewhat similar circumstances. Work will probably be begun on the execution of the new plans within a month.

REDDING, CAL.—The water supply of Redding will be increased by 1,200 gallons a minute by the Water Company's new pumping plant on Jenny Creek, two miles above town. This, with what is furnished by the old plant, will give Redding an abundance of water for domestic purposes and an ample supply under a splendid pressure for fire protection. Under the old system the extreme western part of the city was without fire protection, and in the rest of the municipality the pressure and the supply were none too good for fire-fighting purposes. The improvement cost \$60,000.

SAN FRANCISCO, CAL.—The report of the Executive Committee of the Federated Water Committee contains an appraisal of the Spring Valley plant, with a recommendation that it be purchased by the city, to be used either alone or as part of a greater system, including the Hetch Hetchy. Colonel Heuer's appraisal of the Spring Valley plant, excluding the Lake Merced lands, is said to be \$27,000,000. James D. Phelan, a member of the committee, will endeavor to have the committee include in its recommendations the suggestion that the city acquire the Tuolumne supply, as well as the Spring Valley. In any event, it is pointed out that it will be necessary for the city to purchase the distributing system of the Spring Valley company or parallel it with one of its own.

#### Street Lighting and Electric Power

PITTSBURG, PA.—Governor Stuart has been asked to bring quo warranto proceedings against the Philadelphia



Company to annul its charter, because the company, which has a lighting monopoly in Allegheny County, recently advanced the price of gas 30 cents a thousand feet. The Duquesne Heat and Light Company, of which Robert C. Hall is President, has arranged for a \$10,000,000 loan to build a rival heat and light plant, and expects to build a modern electrical plant to cost \$1,500,000.

ST. LOUIS, MO.—It is estimated that the proposed new lighting contract price will be approximately \$860,000. The location of every city light, arc or mantle, as well as the 4,000 new ones to be installed, is shown by President O'Reilly, of the Board of Public Improvements, on the blue prints he has completed of the territory to be lighted under the new contract. There are now 18,000 mantle lamps, costing the city, approximately, \$504,000 a year, and 1,100 arc lamps, costing, approximately, \$107,800. There are 800 incandescent lamps used to light alleys. The new arc lamps will add about \$50,000 and the new mantle lamps about \$100,000 a year to the city's light bill, based on the present charge of \$98 for arc and \$28 for mantle lamps. Every street railway crossing in the gaslight district, which includes everything west of Jefferson avenue, has eight mantle lamps, two on each corner of the street, the total cost of which is \$224. Arc lights for the street intersections in the downtown districts cost but \$98 for each intersection. Excepting the crossings the gas lamps are cheaper, the cost being about \$60 for each block.

SALT LAKE CITY, UTAH.—The Welsbach Company has made a bid to secure the contract to light Salt Lake City at a rate of \$32 per year for each light for the first three years, and has prepared a schedule of prices being paid elsewhere for street lighting by incandescent gas. This statement shows the varying prices now being paid by the leading municipalities, and some of the local conditions given as causing the variations are: In New York City the municipality furnishes the lamp posts and equipment, the gas company being paid \$24.75 per light per annum; in Brooklyn the company furnishes the equipment; at Buffalo, N. Y., natural gas and the competition of electricity from Niagara Falls power plants are accountable for the low contract price; St. Louis, according to the schedule, pays \$28 a lamp for 18,000 lamps under a ten-year contract; severe electric competition is given as the reason for the low price in Jersey City, while the natural gas of Williamsport, Pa., is accountable for the low price of \$25 that prevails there. The company expects to show that the contract price offered Salt Lake is not exorbitant.

SAN FRANCISCO, CAL.—The Joint Finance and Light Committee of the Supervisors has directed that the lights on certain streets be extinguished at midnight, so that the money thus saved may be devoted to placing lights in other sections of the city. President Britton, of the gas company, said that 619 arc lamps and 3,219 gas lamps had been rehabilitated at a cost respectively of \$43,330 and \$96,570, and 68 new arc lamps and 187 gas lamps would be erected at a cost of \$10,370. The company will have 400 more lights than it had before the fire, though the appropriation of \$275,000 it is to receive is less than heretofore.

SYRACUSE, N. Y.—Superintendent Henry J. Blakeslee, of the Syracuse Bureau of Gas and Electricity, is a member of the committee of twelve selected by the Public Service Commission in the Second District to prepare rules and regulations to be followed in the testing of electric meters. The Public Service Act requires that all gas and electric meters be tested and sealed by representatives of the commission. The testing of gas meters is pronounced a simple matter, as it is not necessary to open the meters after they have been installed, but electric meters require frequent testing and must be readjusted

from time to time. Members of the committee, besides Mr. Blakeslee, are: T. R. Beal, Poughkeepsie; Arthur Williams, Yonkers; C. R. Huntly, Buffalo; Silas Taber, Moravia; L. E. Imlay, Niagara Falls; G. W. Cunningham, Elmira; F. B. H. Paine, Buffalo; J. O. Langdell, Albany; R. M. Searle, Rochester; Prof. Robb, Troy, and J. M. Sheehan, Newburg.

### Fire and Police

ASBURY PARK, N. J.—By action of the City Council the colored fire company in Asbury Park, about which there has been considerable discussion, was eliminated from the department by passing the ordinance over the veto of Mayor Charles A. Atkins. President Kinmonth, who has hitherto favored the colored company, changed his position on the ground that a paid Fire Department was too expensive for Asbury Park, and as that seemed to be the only alternative he felt constrained to vote for the ordinance in the interests of the taxpayers.

COUNCIL BLUFFS, IA.—The death of Detective Wilson and the injury to Patrolman Richardson at the hands of an assassin, have brought the matter of a pension system for the Police Department prominently before the citizens of Council Bluffs, and the members of the City Council are now in a peculiarly receptive attitude toward such a provision, not only for police officers disabled in service, but for the widows and orphans of officers killed in the performance of their duty.

LOS ANGELES, CAL.—Chief Edward Kern has recommended to the Police Board that Council be requested to pass an ordinance making it a misdemeanor for any person other than a regular officer to wear any uniform so nearly resembling that prescribed for police officers as would be likely to deceive, and that there be prescribed a special uniform to be worn by all special policemen who wish to perform their duties in uniform and providing that no other uniform, star, cap or helmet than that designated for the use of special policemen shall be worn by any special policeman if he elects to perform his duties in uniform. Commissioner H. W. Lewis explained that complaints frequently were made of supposed patrolmen, whereas the offenders were special policemen attached to theaters, office buildings and elsewhere who were not under strict regulations, yet wore uniforms like that of regular officers.

LOUISVILLE, KY.—The plans of Col. J. H. Haager, Chief of Police, have been completed for the rental of four cottages to be used as sub-stations in the outer police districts. A sergeant and ten men will be assigned to each of three cottages, the fourth to have five men. These new sub-stations will mean an addition to the force of thirty-five patrolmen and better protection to the suburban residents.

NEW YORK, N. Y.—Fire Commissioner Francis J. Lantry has notified Chief Croker that all special orders heretofore issued bearing on the Roll of Merit Committee and the Committee of Officers appointed for the purpose of examining applicants for the position of Assistant Foreman and higher grades are withdrawn, and that in their places is substituted a board made up of the same officers for the purpose of passing on the meritorious acts as well as upon the examination of applicants for promotions, such board to consist of Deputy Chief of Department John Binns, Deputy Chief of Department Thos. F. Ahearn, Deputy Chief of Department Chas. W. Kruger, Deputy Chief of Department Thos. R. Langford, Deputy Chief of Department John O'Hara, Chief of Battalion Thomas F. Skelly, and Chief of Battalion John B. Conlon. This board will recommend to the Commissioner the names of the men on the Roll of Merit for 1906 throughout the whole Department, without preference to any one particular borough, who should receive the med-

als to be awarded on October 12, 1907, at the Fire Exhibition at the North Monument.

SIoux CITY, IA.—In compliance with a request from Rev. George L. Search, the office of Police Chaplain has been created by the City Council without salary in a resolution which recommended to the Board of Police and Fire Commissioners that Search be appointed to the position without salary. Search has been the probation officer of the courts, and has been authorized to act as a special policeman. He thinks he may do more effective work as a missionary among the needy criminal classes, as he is rated as a regular policeman. It shall be his duty to attend the regular sessions of the Police Court and to give such aid and attention to deserving prisoners as may seem proper and necessary.

#### Government and Finance

CHICAGO, ILL.—The Chicago Charter Campaign Committee of three hundred has perfected a working organization for an energetic finish of the canvass between now and the closing of the polls on September 17. Alderman Milton J. Foreman was named as Chairman of the Committee, and Henry Barrett Chamberlin, Secretary. A substantial fund is to be raised in order that printed matter may be utilized to educate the general public to the importance of the new act to the municipality, and big posters will be put up all over the city giving reasons why the charter should be ratified. Effective measures also will be taken to combat the allegation that taxes will be abnormally increased under the operation of the new act.

PENDLETON, ORE.—The new city bond issue of \$147,000 has gone begging in the Eastern money market. At the last meeting of the City Council, which was the time set for the opening of the bids for the bonds, it was found not a single bid was received. Much consternation was felt for fear some of the improvements already under way would have to be stopped, and that a new city jail, levee improvements, sewer extension and macadamized streets would not be possible. Local banks were consulted, and it was learned that local financiers would take up the issue, and that the \$147,000 worth of bonds looked like a small matter in the eyes of the \$4,000,000 wheat crop of this year.

SCHENECTADY, N. Y.—Comptroller Luffman states that, owing to the absence of a contingent fund, the Board of Estimate and Apportionment is in an embarrassing financial situation. The Board has been compelled to refuse to authorize the repairing of Wall Street with asphalt because of lack of funds, and hesitated to vote \$250 to pay for covering the garbage with dirt on the public dump near Van Vranken avenue, which Health Officer Duryee said was an absolute necessity to protect the health of the community.

#### Refuse Collection and Disposal

EVANSVILLE, IND.—The Board of Public Works has ordered a hand-cart street sweeper, similar to that used in Washington, D. C., and other cities, and it will be tested on the streets. Should the experiment prove successful the Board will purchase a number of them. They cannot be used on the streets, however, until the expiration of the street sweeping contract on the first of January.

NEWBURGH, N. Y.—The Special Committee appointed by the Board of Health, at which Mayor Robinson, Dr. Mavo, Mr. Chapman and the Health Officer, Dr. Snyder, were present, have formulated rules for householders and garbage collectors which will be printed on cards for distribution. The instructions follow:

Garbage must not be thrown in any building, manure pit, lot or street.

Garbage must be put in water-tight covered metal cans.

No ashes nor other material shall be mixed with garbage.

All garbage must be set out Monday, Wednesday and Friday mornings before 6 o'clock on the front of the premises, if possible, and not on the sidewalks.

NEW YORK, N. Y.—William A. Street, of New York, and President of the Seabright Beach Club, has advised Governor Edward C. Stokes, of New Jersey, to consult with Governor Hughes regarding the advisability of laws to limit the area within which the scows may dump the refuse, and the suggestion has been made that the War Department be asked to co-operate with the authorities of the two States interested. It is alleged the nuisance has not been abated, in spite of Mayor McClellan's letter to Street Cleaning Commissioner Bensel, and Mr. Street suggests the War Department station a cutter off Sandy Hook to enforce the emptying of refuse scows far enough out in the ocean to prevent its being washed in on the beaches.

NIAGARA FALLS, ONT., CAN.—Chas. Swayze, garbage collector, has proposed to the City Council that he dispose of the city's garbage as well as collect it. His plan is to cremate the refuse with the aid of lime and sand, and he desires that \$75 a month additional be paid to him for his work. The Council resolved to give the plan a trial for one month.

WASHINGTON, D. C.—Commissioner Henry L. West recently issued an order to the Police, Health and Street Cleaning Departments in reference to the second annual cleaning of the city, and designated September 7 as the day. The crusade is aimed chiefly at the back yards and cellars of private dwellings, and such places where refuse and other waste material, directly or indirectly detrimental to health, has accumulated. Generally it is the duty of the Inspectors of the Health Department to see to it that such places are always kept in a sanitary condition, but, owing to the lack of inspectors and the large territory to be covered, it is a physical impossibility for the force of inspectors to personally visit every place. For that reason Commissioner West has directed Maj. Sylvester to have the members of the Police Department co-operate with the Health Office. Although "cleaning-up" day is something new to the District, it has been successful in Chicago and elsewhere for several years.

#### Parks and City Beauty

ALLENTOWN, PA.—The Park Commission recently held a conference with Mayor Schaeffer relative to lighting for the park, the cluster system of lights being favorably considered. The drinking fountain plans were presented. They will be tiled tops and side. It was decided to lay the concrete work before the winter sets in. The band-stand, which will be a shell affair, will be erected in the west end of the park and will be one of the handsomest in the State. Last year the city appropriated \$7,000 for the park. This year \$7,500 was appropriated. With the site and its walks, terraces, stands, sets and shrubbery the park when completed will be worth over \$100,000. It is expected that by spring it will be thrown open to the public.

FARGO, N. D.—Chairman A. G. Lewis, of the Park Commission, is having some notable improvements made in the City Park, which are adding to its attractiveness. Several new gravel walks are being constructed and the plans for more flower beds are being developed. The most important improvement of the year is the new fountain near the main pathway through the park, which is being constructed by Contractor Birch. The new basin for the fountain will be higher than the old one and about the same diameter. The surface of the water will be a couple of feet above the surface of the ground so that there will be no danger of small children falling into the basin. The basin is being constructed of cement concrete, reinforced with steel. Chairman Lewis is making



good use of the annual park appropriation, and gradually the park is becoming more and more beautiful.

GALESBURG, ILL.—Prof. J. B. N. Standish, former President of Lombard College, and now President of the Improvement Association, and Park Commissioner for the past thirty-one years, while at Moline with Alderman H. H. Griffith, recently said that it pays to give premiums for the best lawn, the best kept grounds. He said it is equally expedient to publish the names of all those who deserve honorable mention for the manner in which their homes are kept. Prizes, for instance, are given for the best geranium bed, the best canna bed and other kinds of flowers. It is usually the case that people who have pride in the appearance of their homes will endeavor to get one of the prizes which consists of money. Galesburg has twenty-five acres of park area inside the city and ninety-three acres outside. The parks are well taken care of. More premiums have been given the past year than ever before. The school children are now as interested as anyone.

MOBILE, ALA.—A proposition is to be presented to the General Council offering Magenta Park, constituting the highest and most beautiful part of bay shell road, and containing seventy-two acres of ground for \$20,000 in five per cent. bonds, together with the option of taking in connection with it the Goelet house, with eight acres, at \$10,500 in bonds. This includes the Dog River property already offered, the city being given the privilege of taking the entire property of forty acres, including the river front. If the city accepts the latter proposition the total expenditure will amount to only \$28,000 with the Goelet house. In this connection, there will be offered to the city, free of any charge, land for a boulevard, 150 feet in width, connecting the two parks. This will enable the city to procure seventy-two acres on the bay front and forty acres on Dog River, connected by a handsome park strip. It is suggested that by extending the boulevard to the old reservoir property on Spring Hill road the city could establish a system of parks, almost surrounding the city, at a nominal expense. If this proposition is accepted the street railroad will be built to the park property and a five-cent fare charged.

SCRANTON, PA.—Mr. E. B. Sturges has loaned a site on Washington avenue, large enough for a small playground, which will be equipped with sand-piles, swings, basket-ball field, running and jumping path and pit, horizontal bar and quoits. The electric light plant will give lights to conduct the grounds until 9 p. m. Contractor Mathias Stipp has given a load of sand, and Charles Chandler, of L. B. Powell & Company, has given a large box to use for storing purposes. It is proposed to have two skilled instructors in attendance.

#### Rapid Transit

BOSTON, MASS.—The Boston Elevated Railway Company has filed plans and petitions with the Railroad Commission preparatory to running eight-car trains. When the new Washington street tunnel is completed the eight-car train will be used exclusively and the Tremont street Subway will be devoted to surface cars only. The eight-car trains will hold 60 per cent. more passengers than the present five-car trains. The Boston Elevated hopes by this radical change to prevent overcrowding, especially at transfer stations. This change necessitates the lengthening of every platform along the line.

CHICAGO, ILL.—The City of Chicago's share of the net profits from the operation of the traction system ordinance the first year will approximate \$1,350,000. If the Chicago railroad's ordinance is accepted, it is figured the city's share will never fall below this figure. Nearly seven months have passed since the beginning of the profit-sharing system, by which the city gets 55 per cent. and

the company 45 per cent. of the net profits, and a fair line has been obtained on what the city may expect in revenue.

HAMMOND, IND.—A committee of Hammond public officials and business men has begun action to annul the fifty-year franchise which was given three years ago by the Knotts city administration to the Hammond, Whiting & East Chicago Street Railway Company. It is alleged that the company ignores the demand of city officials for better cars and better service. The City Council will be asked for an appropriation with which to defray the expenses of the litigation against the street car company.

#### Miscellaneous

FREMONT, NEB.—Mayor Wolz with a revolver backed up by the Fire Department with a half dozen swift streams of water, recently put to flight a gang of three hundred Union Pacific workmen, who were attempting to lay a track through the business section of the city without permission from the City Council. The work was begun by the railroad at daylight. No injunction could be secured on Sunday. Mayor Wolz with his revolver held the workmen at bay until the Fire Department arrived and for hours turned the hose on any workman who approached the uncompleted tracks. The force of the water knocked down every man who got in its way. The railroad finally abandoned the attempt to lay the track.

PASSAIC, N. J.—Dr. Hiram Williams, Health Officer, recently recommended to the Board of Health that the practice of burning leaves be forbidden by the Board. The doctor declares that the smoke arising from the leaves is of serious consequence to those having throat trouble, and is a nuisance generally. Dr. Williams suggests as an alternative that the leaves be carried to rear yards and allowed to decay, as they would give off no odor and there would be nothing unhealthful about them.

PHILADELPHIA, PA.—Mayor Reyburn and Director Grady, of the Department of Wharves, Docks and Ferries, have decided that the surest way to remedy the complaints against unnecessary delay in loading Government coal and all coal for export is to have the city supervise and control the loading privileges. Under the law creating the Department of Wharves, Docks and Ferries authority is given to condemn property for pier purposes, and this will be done. The Director has addressed letters to pier owners and managers asking for suggestions as to rules that should be established to govern loading of coal. Those presented by the Pennsylvania Railroad have met with favorable comment, and it is likely that they will form the basis for the new rules which the Director proposes to put in force.

MUNICH, GERMANY.—The authorities have granted permission to 1,480 saloons in which beer may be sold, 120 wine restaurants, 81 cafés, and 8 tea houses, making an average of one establishment for the sale of liquid refreshments to about each 319 persons, exclusive of the floating population. There is no purchasing of licenses. Any respectable person making application to the proper authorities and securing permission can open a saloon for the sale of beer. A bar, where other liquors as well as beer are sold, is subject to a small restriction, as it must be 15,748 feet distant from any other bar of the same nature. Permission will not be granted by the authorities unless they are satisfied that the public require such bar or saloon for its convenience. The only tax paid is the income tax. The proprietor must keep an accurate account and pay a certain percentage on the profits of his business. The hours for opening the beer saloons and wine saloons are ordinarily 5 A.M., closing at 1 A.M., including Sundays and holidays, the tea houses and coffee houses closing at 7 o'clock P.M.



## LEGAL NEWS

### A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

#### GRANTS TO RAILROADS

**Louisville & N. R. Co. vs. City of Cincinnati.**—Public streets, squares, landings and grounds are held in trust for the public, and being so held they are, for the use for which they were dedicated or acquired and subject to the property rights of the abutting owners, under the absolute control of the legislative power of the State. In this State the care, supervision and control of public highways, streets and grounds in cities is delegated to the Council; but, notwithstanding this delegation of general power over them, the State, now and since 1852, has in express terms delegated to cities the power to grant to railroad companies the right to occupy or incumber and use them, or in express terms has made the right subject to agreement with the municipal authorities as to the manner in which they are to be occupied, so that the general power of care, supervision, and control that has been delegated to cities does not carry with it the power to grant such right. The act entitled "An act to provide how railroad and highway crossings may be constructed," does not authorize a municipality to grant to a railroad company the right to occupy a public common or landing with an elevated railway structure. It is not the power of the Legislature, unless in the exercise of the power of eminent domain, to authorize property, dedicated to the public for a specific purpose, to be used for a purpose inconsistent with the purpose for which it was dedicated. The ordinance of the Council of the city of Cincinnati, entitled "An ordinance agreeing upon the manner, terms and conditions upon which the Louisville & Nashville Railroad Company may use, occupy and cross over, along and upon the streets, alleys and public grounds of the city of Cincinnati, for the purpose of constructing, maintaining and operating an extension of its steam railroad from a point at or near pier No. 1, on the Ohio side of the Newport and Cincinnati Bridge in the city of Cincinnati, to the site of a proposed depot south of Water street, between Vine and Plum streets, in said city," passed November 7, 1904, and as amended August 28, 1905, is void.—Supreme Court of Ohio.

#### PUBLIC BUILDING

**Wheelock, et al. vs. City of Lowell.**—The purchase of land and the construction of a building for holding public meetings and other purposes was contemplated. The petitioners contended that the appropriation was not for a public purpose, that the city already had a City Hall with sufficient accommodations; that a building which the proposed one was to replace was a hall often rented for general purposes. The burden of proof was on the petitioners. The court said that where the dominant motive for the erection by the city of a building is a strictly public use, the expenditure for its erection is legal, though incidentally the building may occasionally be devoted to uses which are not public. It was also contended that the commission charged with the construction of the hall was in violation of the Revised Statutes, providing that an election of a city officer by a municipal body shall be invalid unless made by a viva voce vote. The Lowell City Charter authorizes the City Council to create commissions of citizens for the performance of municipal functions. In this instance the duty of supervising the construction of a public building is not imposed by law on any particular city official. The court also held that the city might by order, instead of by ordinance, bill or resolution, appropriate public funds for a public use.—Supreme Court of Massachusetts.

#### HOURS OF LABOR

**Burns vs. City of New York.**—One dealing with a municipal corporation is presumed to know what its powers are, and, if he performs services for it beyond its powers to contract therefor, he cannot recover compensation. The Legislature may determine the number of hours which shall constitute a day's work for a municipal corporation, and prohibit it from making a contract for the performance of services for a greater number of hours in any one day. The Labor Law, Laws of 1897, as amended by the Laws of 1899, providing that eight hours shall constitute a legal day's work, except that an agreement for overwork may be entered into, except on work for a municipal corporation, amends all municipal charters, and prohibits a city from contracting for extra services, and an employee cannot recover for services beyond eight hours per day.—Appellate Division, Supreme Court of New York.

## NEGLIGENCE IN PUBLIC WORK

**City of Cherryvale vs. Studyvin.**—The fact that a work of municipal improvement is being carried on by the municipality is of public benefit, or even a public necessity, does not exempt the municipality from liability from damages caused by negligence in the prosecution thereof. A city of the second class has control of the alleys therein and has the right to extend sewers under such alleys. Where the owner of a building abutting upon an alley through which the city is causing a ditch to be blasted for a sewer claims damages to his building by reason thereof, it is incumbent upon him to allege and prove that his building was damaged by exploding unnecessarily powerful blasts; that his injury is the result of negligence, and not incidental to a careful prosecution of the work done with due regard to the place and surroundings.—Supreme Court of Kansas.

#### ISSUE OF BONDS

**State vs. City of Clay Center, et al.**—The first publication of a notice of a bond election to be held under the provisions of the Laws of 1905, authorizing certain cities to issue bonds for natural gas, water, lighting and heating purposes, may be made in the same issue of the official newspaper which contains the publication of the ordinance directing the calling of the election. The issue and sale of municipal bonds voted for the construction of an electric light plant will not be enjoined merely because the city officials entertain and express an intention to expend the money to be derived in equipping the plant to supply electric power to the inhabitants of the city.—Supreme Court of Kansas.

#### POWER OF REMOVAL

**People ex rel. Maloney vs. Douglass, et al.**—Niagara Falls City Charter provides that the Board of Police Commissioners may, by an affirmative vote of at least two Commissioners, at any time remove from office the Chief of Police or any policeman, etc., found to be incompetent, unable to perform the duties of his office, or guilty of violating any of the rules, regulations, or orders of the Board or of a superior officer. Section 275 provides that if a charge be made by any person against a member of the police force that he is incompetent, or has been guilty of neglect of duty, misconduct in office, or conduct unbecoming an officer, the charge must be put in the form required by the rules of the Police Department, etc., and that the Board must then try and determine the charge according to such rules, and that if the accused be found guilty he may be suspended from pay for a definite time, fined, etc., or dismissed from the force. It was held that the two sections provide different remedies, and that the Commissioners are vested under section 274 with the summary power of removal without proceeding to a trial under section 275.—New York Supreme Court, Appellate Division.

#### VALIDITY OF PAVING ASSESSMENT

**Nalle vs. City of Austin.**—An assessment against property abutting on a street to the amount of benefits to accrue by the paving of the street, and subject to collection before the pavement is done, is not a taking of property for public use without compensation, in violation of the Constitution, where the city can only use the amount of the assessment for the paving of the street. An assessment for benefits for a street improvement is not an assessment for taxation, and is not subject to the constitutional limitations relating to taxation.—Court of Civil Appeals of Texas.

#### OBSTRUCTION IN STREETS

**City of New York vs. De Peyster, et al.**—Where there is an obstruction of a permanent nature upon a public street, particularly where it is of long standing and a right to maintain it is asserted, a court of equity will entertain jurisdiction of the matter upon an injunction proceeding brought by the city. Where a permit for a vault contemplated an opening under, but not through, the sidewalk, and the ordinance in force when the permit was issued regulating such openings expressly limited them to the space within five feet of the building line, an opening through the sidewalk and beyond that distance constituted a nuisance per se. No lapse of time will deprive the public of its right to have an encroachment on a highway removed, where the encroachment does not extend to the full width of the highway and entirely cut off travel. Where it does not appear that at city at any time possessed authority to permit a certain encroachment upon a public street, it may not be inferred by lapse of time that a permit therefor was issued.—Appellate Division, Supreme Court of New York.

## MUNICIPAL REPORTS

**Paducah, Ky., Annual Reports of 1906.**

Hon. David A. Yeiser, Mayor.—The Mayor reviews the work of all the departments in his address to the General Council. His principal recommendations are for a large park beyond the city limits and the passage of a building ordinance. President James E. Welhelm of the Board of Public Works notes the improvement in street cleaning due to the use of street flushing machines. City Engineer L. A. Washington reports that the expenditures for new public works were \$171,091, on which the cost of engineering was 3½ per cent., nothing being charged for general work of the department. The Superintendent of the Electric Lighting Department gives the operating cost per arc light at \$43.00 a year.

**Water Commissioner, Somerville, Mass., Annual Report of the. 1906.**

Frank E. Merrill, Commissioner.—The population of Somerville is 71,000. The construction of water works was begun in 1868; the local works are owned by the city, the supply coming from the Metropolitan system; the total consumption for the year was 2,248,741,000 gallons; the number of gallons used daily per inhabitant was 89; there are 91.3 miles of mains in use, varying from 4 to 20 inches in diameter; the cost of repairs per mile was \$0.86; pressure on mains varied from 35 to 100 pounds; the number of meters in use was 2,829, the percentage of metered services being 24.55.

**Water Works, Minneapolis, Minn., Annual Reports of the Registrar and Supervisor. 1906.**

H. B. Gray, Registrar. J. H. McConnell, Supervisor.—The summary of statistics, made out in accordance with suggestions adopted by the New England Water Works Association by Wm. W. Redfield, Engineer of Water Department, states that the population of the city is 275,000; construction of works began in 1868; source of supply is the Mississippi river; two steam power stations pump water from the river to two reservoirs 3½ miles distant, thence by gravity to the mains, but direct pressure may be applied to mains; the total gallons of water consumed was 6,426,708,815; gallons passed through meters, 2,511,393,000; daily consumption, per capita, 64 gallons; total number miles of pipe in use, 332; taps in use, 30,070, of which 19,276 were metered.

**Board of Public Works, Lynn, Mass., Annual Report. 1906.**

—The most notable paving work of the year was the laying of a section of concrete paving by the Hassam Paving Company. Some macadamizing, as well as bitulithic work, was also done. A traction engine purchased the year before was not used because hauls were too short. The fire alarm system installed the previous year worked well, but a rearrangement and systematizing of fire alarm boxes is needed. The number of street lights in use was 328 arcs and 1,266 incandescents. The cost of operation and maintenance of four steam rollers was \$4,972, and their earnings are given as \$5,096. The Sewer Department cleaned 1,047 catch-basins, removing from them 3,260 loads at a cost of \$2.25 per basin.

**Water Works, Erie, Pa., 40th Annual Report of the Commissioners. 1906.**

Clark Olds, President.—The total receipts of the Department were \$180,506. The amount of water pumped was 4,121,289,854 gallons. The average daily per capita pumpage, based on a population of 65,000, was 173.7 gallons. Water furnished to large consumers by meter was 1,049,360,913 gallons. The daily average lift for high service was 298 feet, and 236 for the low service system. There were laid 14,697 feet of pipe, making the total length of mains 122 miles; there are 53 miles of service pipes. The most important work of the year was the extension of the intake pipe into Lake Erie. Included in the book are detailed plans of the intake extension.

**Board of Fire Commissioners, Trenton, N. J., Annual report, 1907.**

William Ossenberg President.—Perhaps the most interesting feature of this report is Secretary J. Wallace Hoff's tabulated summary of expenditures, a scheme that has been in use since 1896. The expenditures of each company are distributed in thirty-three separate items with all totals carried out for the company and for each item for all companies. A tabulated statement is given of the value of department equipment, divided into thirteen accounts. The usual statements of fires, their causes and nature, as well as insurance statistics, are included.

**Street Commissioner, Newport R. I., Annual report, 1906.**

J. K. Sullivan, Commissioner.—In the course of a series of comments on the interesting works of the year, the Commissioner mentions the work of applying an odorless oil to the surface of Bath Road. For the first few days there was some fault found owing to vehicles picking up oil and injuring clothing and carriages, but as soon as the road absorbed the oil no further complaints were made. The book includes a detailed statement of roadways, sidewalks, curbs, gutters and sewers, giving the amount and kind of material in use on each street.

## TRADE NOTES

**Annual Statement.**—The Firestone Tire and Rubber Co. held its annual meeting at the main office of the company, at Akron, O., August 21. The annual reports showed the past year was the most prosperous in the history of the company, the increase in sales over the previous year being 60 per cent. Plans for an increase of the plant to the extent of 40 or 50 per cent. above its present capacity were considered. The following officers were re-elected: H. S. Firestone, president and general manager; Will Cristy, vice-president; S. G. Carkhuff, secretary, and L. G. Lisler, treasurer. The office of assistant treasurer was created and Frank R. Talbot elected to the position.

**Concrete Piling.**—The Raymond Concrete Pile Company, 71 Nassau Street, is doing the concrete piling work for the branch of the Carnegie Library now building at 742 Tenth street, New York City. The use of concrete piling is being specified more and more commonly in New York and neighboring cities.

**Hand-Sweepers.**—The absence of dust on the floors of the exhibition buildings at the Jamestown Exposition has been favorably noted by visitors. This condition has been brought about by the use of the Peerless Sanitary Hand-sweepers.

These machines are equipped with brooms adapted for use for inside work on hardwood, concrete and tile floors, as well as for work outdoors on streets, sidewalks and bridges. In Washington, where the machines have been adopted for use on the Potomac Highway bridge, two men who formerly worked all day with hand-brooms now finish the work in half a day. The sweepers are rapidly being adopted by bridge departments, armories, gas plants and cold storage plants. James S. Barron, Franklin street and West Broadway, New York City, is the sole agent for the machines.

**Metal-Filament Lamp.**—The General Electric Company, Limited, London, England, has given the following retail prices for the Osram (tungsten) lamp: For lamps rated at 30-candlepower, \$1; 50-candlepower, \$1.06; 100-candlepower, \$1.62. The efficiency of the lamps, it is claimed is 1.1 watts per Hefner candlepower, which is equivalent to 1.25 watts per English candlepower.

**Refuse Destructor.**—Messrs. Heenan & Froude, Ltd., of Manchester and Worcester, England, have received from the North Metropolitan Electric Power Supply Company an order for a refuse destructor to be erected in conjunction with the electric power station which is about to be erected for the supply of electrical energy in the city and rural district of St. Albans, England. Each unit of the destructor, which will be a duplicate and can destroy upwards of 40 tons of refuse per day, will be provided with a water tube boiler capable of utilizing the whole of the heat from the combustion of the refuse for generating steam for use in the power station. The destructor must be ready for operation early in the new year.

**Removals.**—The Lederle Laboratories announce that they have removed to 39-41 West Thirty-eighth street, New York City. The new offices and laboratories will afford ample room and greatly enlarged facilities for conducting the work of the several departments. Persons interested in the work are invited to call and inspect the new equipments.

**Spring Hoisting Water Tower.**—The Seagrave Company, Columbus, O., has recently completed and tested the first water tower ever built in the United States which is controlled by springs and screws, and can be operated by one man. The apparatus was made for the New York Fire Department and was tested by the Columbus, O., department. The tower is mounted on a turntable, and can be inclined at any angle. The maximum height of the nozzle from the ground is 50 feet. The water receiver has six 3-inch inlets; the tower pipe is 5 inches inside diameter; the discharge tips are 1½ inch, 1¾ inch and 2 inch.

**Watt Meters.**—The General Electric Company, in Bulletin No. 4527, describes the Thompson Polyphase Induction Wattmeters, which are made to measure energy in any two-phase, three-phase or monocyclic circuit. They may be applied in a circuit carrying a mixed load of lamps, motors or other translating devices and record accurately, irrespective of unbalanced load conditions. The meters are made in three types, one for home service with metal cover, and two for switchboard use, one having a metal cover and one a glass cover. The Bulletin gives catalogue numbers and capacities of the various sizes and illustrates by diagram various methods of installation.



## NEWS OF THE SOCIETIES

**New England Water Works Association.**—The twenty-sixth annual convention will be held at Springfield, Mass., on Wednesday, Thursday and Friday, September 11, 12 and 13, at the Cooley Hotel, when the headquarters of the association will also be established during the convention. Arrangements have been made for the Secretary's Office, Convention Hall and Associates' Exhibits. All persons interested in the problems relating to water supply are cordially welcome at the meetings, and an invitation is extended to all who are eligible to become members. Exhibits at the convention will be in charge of Mr. Edward F. Hughes, of the Chapman Valve Manufacturing Company, 94 Pearl street, Boston, Mass. All applications, stating space needed, character and approximate weight of exhibit, should be addressed to Mr. Hughes, as above. The Local Committee of Arrangements consists of A. E. Martin, Superintendent, Springfield Water Department; A. R. Hathaway, Water Registrar, Springfield Water Department; Elbert E. Lochridge, Chief Engineer, Springfield Water Department. The programme is as follows:

Wednesday, September 11. 12 m. The association will assemble in the convention hall, Cooley Hotel, where it will be received by His Honor William E. Sanderson, Mayor of Springfield. Afternoon Session. 2:30 p. m. Meeting of Executive Committee. 3:00 p. m. The following paper will be presented: "The Springfield Water Works," by Elbert E. Lochridge, Chief Engineer, Springfield Water Department, Springfield, Mass. Discussion by Allen Hazen, C.E., Consulting Engineer, and others. Evening Session. 8:00 p. m. "Illustrated Talk on Australian Water Works," by Allen Hazen, C.E., New York City. "Description of Plant at Peabody, Mass., involving construction of Tunnel, new Reservoir, new Pumping Station, and High Duty Worthington Pump," by F. A. Barbour, C.E., Boston, Mass. "Fire Hydrants," by Robert E. Newcomb, C.E., Holyoke, Mass.

Thursday, September 12. 9:30 a. m. "Computation of the Value of Water Power, and the Damages caused by the Diversion of Water used for Power," by Charles T. Main, Mill Engineer and Architect, Boston, Mass. "Damage Suits against the City of Woonsocket, R. I. for Diversion of Water Power," by Frank E. Mills, City Engineer. "Diversion of Water Power," by Charles E. Chandler, C.E., Norwalk, Conn. "Water Rights," by Richard A. Hale, Principal Assistant Engineer, Essex Water Power Company, Lawrence, Mass. Afternoon Session. 2:30 p. m. "Waltham Reinforced Cement Concrete Reservoir," by Bertram Brewer, City Engineer, Waltham, Mass. "Water-proofing of Reservoirs," by Frank L. Fuller, C.E., Boston, Mass. Evening Session. 8:00 p. m. "Charles River Basin," by Hiram A. Miller, Chief Engineer, Charles River Basin Commission, Boston. Report of "Committee on Uniform Statistics"—Joseph E. Beals, Middleboro, Mass.; J. C. Whitney, Newton, Mass.; M. N. Baker, New York City; Charles W. Sherman, Boston, Mass.; A. R. Hathaway, Springfield, Mass. Report of "Committee on Standard Specifications for Cast-Iron Pipe"—Dexter Brackett, Boston, Mass.; F. F. Forbes, Brookline, Mass.; Frank A. McInnis, Boston, Mass. "Cast-Iron Pipe Specifications," by William R. Conard, Inspector, Burlington, N. J.

Friday, September 13. Excursions. Through the courtesy of the Chapman Valve Manufacturing Company, an opportunity will be afforded the members and their guests to inspect their works at Indian Orchard and partake of lunch. At 9 o'clock a. m., special trolley cars will be provided for the trip. Arrangements have been made for visiting the filtration plant of the Springfield Water Department, at Ludlow, or to the United States Armory, as members may prefer.

**American Society of Municipal Improvements.**—Special efforts are being made to have the exhibit of municipal appliances and supplies as complete as possible at the meeting at Convention Hall, Detroit, Mich., October 1-4. The hall will be decorated in gold and white. Particu-

lars regarding the terms charged exhibitors, figured on an actual cost basis, may be obtained from Robert K. Davis, 245 Jefferson avenue, Detroit, Mich. Among the trips that have been arranged for members is one to the Michigan Central tunnel, under the Detroit River, now under construction.

**League of Iowa Municipalities.**—The program for the tenth annual meeting, Council Bluffs, September 17-19, is as follows:

Tuesday, September 18. 9 a. m. to 12.—Reception and registration of delegates, headquarters at Grand Hotel. 10 a. m. to 12.—Committee meetings. Executive Committee, Assembly Hall, Grand Hotel. Afternoon. 1:30 p. m.—Call to order. Reading of minutes of last minutes. Address of welcome by Hon. Donald MacCrae, Jr., Mayor of Council Bluffs. Response and President's address by Hon. George W. Mattern, Mayor of Des Moines. Report of Secretary-Treasurer Frank G. Pierce, Marshalltown. Report of Committee on Legislation by Hon. John C. Williams, Chairman, Oskaloosa. Business meeting—Appointment of auditing committee; appointment of question box committee; appointment of resolution committee; general business. Reports from municipalities. Adjournment to 8 p. m. Evening Session. 8 p. m.—Report of Committee on Street Paving by Hon. L. B. Stewart, Cedar Falls. Paper: "The Proper Width of Pavements on Residential Streets," by Hon. Andrew Rosewater, M.A.S.E., City Engineer of Omaha. Discussion by delegates. Report of Committee on Taxation and Assessment, by Hon. O. L. Ingledue, Mayor of Marshalltown. Discussion by delegates. Adjournment to 9:30 a. m., Wednesday.

Wednesday, September 18. 9:30 a. m.—Department meetings: Mayors and Councilmen, Assembly Hall at Grand Hotel; clerks, treasurers and auditors, Council Chamber at City Hall; city attorneys, Secretary's Room at Grand Hotel; health officers, President's Room at Grand Hotel; engineers, City Engineer's Room at City Hall. Afternoon. 1 p. m.—All delegates meet at Assembly Hall, Grand Hotel. Report of Committee on Municipal Franchises by H. F. Johnson, Councilman, Pella. Paper: "The Law of Municipal Franchises in Iowa," by Hon. B. F. Swister, City Attorney, Waterloo. Discussion by delegates. Paper: "Municipal Housekeeping," by Rev. Eleanor E. Gordon, Des Moines. Report of Committee on Uniform Accounting, by Hon. F. C. Norton, City Auditor, Burlington. The delegates at banquet at the Grand Hotel. Toastmaster, Hon. Donald MacCrae, Jr., Mayor of Council Bluffs. The address of the evening will be given by Hon. Henry T. Clarke, Jr., Railway Commissioner of Nebraska, on the subject, "Municipal Taxation of Railroads."

Thursday, September 19. Morning Session. 9:30 a. m.—Paper: "Practical Street Lighting," by Hon. R. L. Taylor, City Clerk, Spencer. Discussion. Paper: "The Law of Special Assessments in Iowa," by Hon. M. J. Mitchell, City Attorney, Fort Dodge. Discussion. Paper: "Revised Rules and Regulations of the State Board of Health," by Dr. Louis A. Thomas, Secretary of the State Board. Discussion. Reports of department chairmen. Reports from municipalities represented. Adjournment to 1 p. m. Afternoon. 1 p. m.—Report of Question Box Committee; report of Committee on Legislation; report of Committee on Resolutions. General business meeting: Election of place of next meeting; election of officers; adjournment.

**American Association of Park Superintendents.**—At the ninth annual meeting, Toronto, Ont., Can., August 15-17, Vice-President John Chambers, of Toronto, acted as master of ceremonies and presiding officer. A tour of the city parks, Queen's, University, Alexandria and High, was made in carriages. A lunch was served at High Park, and addresses of welcome were extended to the visitors by the city and park officials. Exhibition Park, where the annual Toronto Exhibition, famous throughout Canada, is held, was visited and the extent and value of the buildings was noted with some surprise. At a business meeting in the evening of the first day a paper on "Band Concerts" was read by Superintendent Theodore Wirth, of Minneapolis, Minn. On the second day a visit was made to Island Park, a recreation ground built in the waters of Lake

Ontario. After lunch speeches were made by J. B. Shea, of Boston, Mass., and Charles E. Keith, of Bridgeport, Conn., who captured the crowd by his eulogy of the city and its parks. On the following day, at the evening session, a paper was read by Dr. Baker, Washington, D. C., on "How to Make Our Parks More Beautiful." John Dunbar, of Rochester, N. Y., read a paper on "Some Trees and Shrubs for Park Planting That Are New or Little Known." On Sunday morning an automobile ride was taken to the following parks: Riverdale Zoological, Rosedale Ravine, Reservoir Park and the Upper Canada College. The cities of Minneapolis and St. Paul were selected for the next meeting place. The following officers were elected for the ensuing year: John F. Cowell, of Buffalo, N. Y., President; John Chambers of Toronto, Ont., G. X. Annhyn of New Haven, Conn., J. W. Rogers of Cincinnati, O., John Dunbar of Rochester, N. Y., J. W. Thompson of Seattle, Wash., and Jackson Dawson of Boston, Mass., Vice-Presidents; and F. L. Mulford, of Harrisburg, Pa., Secretary and Treasurer.

**International Association of Fire Engineers.**—Chief Belt of the Fire Department met the members of the Citizens' Committee recently to discuss the convention of Fire Chiefs, to be held in Washington, October 8-11. The order for badges has been placed. These are to be of "gilding" metal, with blue lettering. The question of granting privileges to photographers went over to another meeting. Considerable dissatisfaction having been expressed by manufacturers at the charge of 20 cents a foot for exhibiting space, Cuno H. Rodolph moved that these manufacturers be notified that space and suitable storage room would be furnished free of charge to all exhibitors. The motion was carried. Chief Belt's plan to have the exhibits in a floored tent was discussed, many of the committee doubting the wisdom of putting the exhibits under canvas. The Chief was instructed to keep an eye out for any building that would be available for the purpose.

**Virginia State Firemen's Association.**—At the twenty-first annual convention, Newport News, August 25-30, the following officers were elected: President, Col. O. B. Roller, Mayor of Harrisonburg; Senior Vice-President, John E. P. Fraley, Newport News; Secretary, George B. Cumming, Portsmouth; Treasurer, Thomas J. Williams, Charlottesville; Statistician, O. H. Dwyer of Harrisonburg. Harrisonburg was chosen as the next place of meeting.

**Merchants' Association of New York.**—A conference was recently held in New York City, for the purpose of considering the new uniform bill of lading which has been tentatively approved by the Interstate Commerce Commission, upon which a final hearing will be had on or before October 15, preparatory to its being put into effect January 1. While the matter principally concerns dealers in the staple articles of commerce, it is not without interest to dealers in general supplies.

**Tri-County Firemen's Convention.**—The meeting to be held in Chester, Pa., in October, will be one of the most elaborate affairs ever held in the section. Already twenty-four companies in Delaware, Chester and Montgomery counties have signified their intention to send delegates. The parade will be a very large one, fifty companies having accepted invitations to participate. Norristown may endeavor to have the second convention.



**National Tax Association.**—Governor Harris has extended an invitation to the chief executive of each State in the Union to appoint delegates to attend a national conference to be convened in Columbus, O., on November 12 next under the auspices of the National Tax Association. The success of the conference is already assured. Leading students of the problem of taxation have expressed their intention of being present and participating in the programme. The tax laws of the States are widely at variance and the object of the conference is to call attention to this lack of uniformity and to suggest ways and means to remedy the apparent evils.

### Calendar of Meetings

- September 10-12.**  
League of Third Class Cities of Pennsylvania.—Convention. McKeesport, Pa.—Edward C. Charlton, Secretary, Bradford, Pa.
- September 10-12.**  
Association of Edison Illuminating Companies.—Annual convention, Hot Springs, Va.—S. C. Mumford, Assistant Secretary, Detroit, Mich.
- September 11-13.**  
New England Water Works Association.—Annual convention, Springfield, Mass.—William Kent, Secretary, Narragansett Pier, R. I.—Office, Tremont Temple, Boston, Mass.
- September 13-14.**  
Mayors' Association of Illinois.—Second annual meeting, Bloomington, Ill.—Ex-Mayor McCastrin, Rock Island, Ill.
- September 17-19.**  
National Association of Controllers and Accounting Officers.—Second annual convention, Hotel Jefferson, Richmond, Va.—Howard C. Beck, Secretary, Detroit, Mich.
- September 17-19.**  
League of Iowa Municipalities.—Tenth annual convention, Council Bluffs, Iowa.—T. G. Pierce, Secretary, Marshalltown, Ia.
- September 18-20.**  
Michigan Gas Association.—Sixteenth annual meeting, Battle Creek, Mich.—Alonzo P. Ewing, Secretary.
- September 18-20.**  
League of American Municipalities.—Annual convention, Jamestown Exposition.—John MacVicar, Secretary, Des Moines, Ia.
- September 23-28.**  
National Irrigation Congress.—Fifteenth annual convention, Sacramento, Cal.
- September 30-October 4.**  
American Public Health Association.—Thirty-fifth annual meeting, Atlantic City, N. J.—Dr. Charles O. Probst, Secretary, Columbus, O.
- October 1-4.**  
American Society of Municipal Improvements.—Annual convention, Detroit, Mich.—George W. Tillson, Secretary, 831 Ocean avenue, Brooklyn, N. Y.
- October 8-11.**  
International Association of Fire Engineers.—Thirty-fifth Annual Convention, Washington, D. C.—James McFall, Secretary, Roanoke, Va.
- October 10-12.**  
American Electro-Chemical Society.—Fall meeting, Chemists' Club, 108 West 55th street, New York City.—Dr. Joseph W. Richards, Lehigh University, South Bethlehem, Pa.
- October 14-16.**  
American Street and Interurban Railway Engineering Association.—Annual convention, Atlantic City, N. J.—S. W. Mower, Secretary, Southwestern Traction Co., London, Ont.
- October 14-18.**  
American Street and Interurban Railway Association.—Annual convention, Atlantic City, N. J.—B. V. Swenson, Secretary, Engineering Societies Building, 33 West Thirty-ninth street, New York.
- October 15-17.**  
Association of Railway Superintendents of Bridges and Buildings.—Annual meeting, Milwaukee, Wis.—S. F. Patterson, Secretary, Concord, N. H.
- October 16-18.**  
American Gas Institute.—Second annual meeting, Washington, D. C.—Jas. W. Dunbar, Secretary, New Albany, Ind.
- November 12.**  
National Tax Association.—Conference, Columbus, O.
- November 19.**  
National Municipal League.—Annual convention, Providence, R. I. (in conjunction with the American Civic Association).—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

### PERSONALS

ALVORD, JOHN W., Chicago, Ill., has been retained as Consulting Engineer by Grand Rapids, Mich., to investigate and report on the cost of obtaining a supply of water for the city from Lake Michigan.

ARNOLD, BION J., of Chicago, Ill., will probably be retained by the New York Public Service Commission to make a valuation of the New York City transportation systems.

BURNS & McDONNELL, Civil, Hydraulic and Sanitary Engineers, Kansas City, Mo., have moved their offices from the Dwight Building to rooms No. 821-22-23, Scarritt Building.

BUSSE, FREDERICK, Mayor of Chicago, Ill., and party, visited New York recently to study the newly electrified lines of the New York Central Railroad, preliminary to advocating similar improvements on the lake front in Chicago. Those with Mayor Busse were Dr. W. A. Evans, Health Commissioner; Walter H. Wilson, Comptroller; Milton H. Foreman, Chairman of the Aldermanic Committee on Local Transportation; John M. Glenn, Secretary of the Illinois Manufacturers' Association, and J. E. Donnelly, Chairman of the Chicago Smoke Commission.

CASEY, MICHAEL, San Francisco, Cal., a union labor leader, has been named as President of the Board of Public Works of the city, vice George F. Duffey, resigned.

DINAN, J. T., Chief of Police of San Francisco, Cal., has tendered his resignation to the new Police Commission named by Mayor Taylor to replace the old Commissioners who were removed for misconduct in failing to remove Chief Dinan for incompetency in office. The new Commission consists of Joseph A. Leggett, Charles A. Sweigert, Hugo D. Keil and A. D. Cutler.

DOW, A. W., of the firm of Dow & Smith, New York, N. Y., has been employed by the Street Board of Hartford, Conn., to inspect the asphalt pavements now laid in that city, and to have charge of all inspection of construction hereafter; Mr. Dow was formerly asphalt expert for the District of Columbia.

FARR, L. L., Mayor of San Angelo, Tex., was married recently to Miss Mattie Pistoli, a local school teacher.

GREGG, M. J., Alderman of the Seventh Ward, Birmingham, Ala., recently elected after having served on the Board of Education, has been named as Chairman of the Council Committee on Sanitation and Police, in which position he will have charge of the erection of a crematory.

GUTHRIE, GEORGE W., Mayor of Pittsburg, Pa., has been spending his vacation at his summer home at Watch Hill, Mass.

HOPKINS, JAMES R., Chief of the Somerville, Mass., Fire Department for the past thirty-five years, is recovering from an illness brought on while fighting a fire in the Mystic branch of the Boston & Maine Railroad; he is the oldest Fire Chief in New England, and perhaps the oldest active fireman in America, being seventy-one years of age.

JOHNSON, WILLIAM C., and Robert G. Cauthorn, two prominent attorneys of Vincennes, Ind., have been appointed by Governor Hanley to succeed Daniel L. Bonner and George Gardner on the Metropolitan Board of Police Commissioners. Mr. Johnson's term expires in January, 1910, and that of Mr. Cauthorn in January, 1909. Mr. F. M. Tindolph is the third member of the Board.

LEGGETT, J. P., Mayor of Carthage, Mo., has returned home after a six weeks' automobile tour, which included stops in a number of cities, including Boston, Mass.,

which was reached twenty-five days after leaving Carthage. Mayor Leggett praises the eastern highways and says some of the State roads are almost perfect.

MAHON, C. HEYWARD, Mayor of Greenville, S. C., was renominated for a third term over Avery Patton recently, the nomination being equivalent to an election.

McKENZIE, RODERICK, a business man of Salt Lake City, Utah, has been named as Chief of Police by Mayor Bransford, recently elected, and relieves Capt. John B. Burbidge, who has been acting chief since the resignation of George Sheets three or four weeks ago.

MORROW, JAY J., Engineer Commissioner of the District of Columbia, is making a personal inspection of streets in various sections of the city, preparatory to recommending improvements to be included in the annual estimates of the Commissioners to Congress, this being his first report as Commissioner.

MORTIMORE, W., M. I., Mechanical Engineer of Great Britain, visited New York City on his way to Seattle, Wash., to install the Meldrum simplex destructor ordered by that city. This will be the first example of the English destructors to be built in this country on the Pacific Coast, and the largest of this class as yet designed, having a capacity of eighty tons per day. Mr. Mortimore is the Chief Engineer for Meldrum Brothers, and has lately superintended the operation of the destructor plant in Paris, France, the first of a series of three having a united capacity of 600 tons daily. He is here at the instance of the Universal Destructor Company, of New York, the representative of the Meldrum Company in the United States and Canada.

MULHOLLAND, RICHARD, former Mayor of Dunkirk, N. Y., who was also at one time President of the Water Board, and filled numerous other municipal offices, died recently, aged sixty-one years.

OVERTON, JOHN P., Mayor of Santa Rosa, Cal., resigned, but the City Council voted unanimously to reject the resignation and will urge him to remain at the head of the city government.

PARK, W. A., an expert on paving, has been investigating for the past three weeks the work that has been performed under the abutting property law at Knoxville, Tenn.

QUIGLEY, JOHN P., Chief Engineer of the Fire Department of Syracuse, N. Y., recently celebrated the tenth anniversary of his appointment as head of the Department, which he joined as a fireman May 4, 1878.

SULLIVAN, NEELY, Chief of the Fire Department of Memphis, Tenn., has returned to active duty after his vacation and sick leave.

WARD, GEORGE B., Mayor of Birmingham, Ala., is on a trip in Europe.

WEST, HENRY L., Commissioner of the District of Columbia, will attend the convention of the League of American Municipalities at Norfolk, Va., September 18-20, and will participate in the discussion of "Municipal Government by Commission vs. Mayor and Council," by presenting practical information as to the working of the Commission form of government at the National capital.

WILLIAMS, WILLIAM H., Chief of Police of Chester, Pa., was with other members of the Fifteenth Pennsylvania Cavalry the guest of his old Commander, Gen. William Palmer at Colorado Springs, Co., and while away visited Denver, Colorado Springs, Colorado City, Manitou, Garden of the Gods, Cave of the Winds, Cliff Dwellers and Indian Ruston's Canons, Cripple Creek, High Drive and other places.

## THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

### BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
<b>Street Improvements</b>				
New York	Brooklyn	September 11	Constructing sidewalks on six or more streets.	Bird S. Coler, Boro. President.
Ohio	Marietta	September 12, noon	Grading, etc., portion of Marietta-Barlow Road.	J. M. Williams, County Auditor.
Ohio	Cincinnati	September 12, noon	Grading, paving, etc., portions of Palm ave.; cost, \$6,316.	C. N. Dannenhowe, City Engineer.
Minnesota	St. Paul	September 12, 2 P.M.	Curb, boulevard, surface, Daly St.; curb Fairmont Avenue.	R. L. Gorman, Clk. Bd. Pub. Works.
New Jersey	Palisades Park	Sept'ber 12, 8:30 P.M.	Grading and macadamizing two thoroughfares.	Lemuel Lozier, Hackensack, Eng'r.
Ohio	Silverton	September 12	Furnishing material and constructing cement sidewalks.	A. A. Sprague, Village Clerk.
Ohio	Wauson	September 13, 10 A.M.	Constructing grade on County line, German township.	J. E. Merrill, County Auditor.
Iowa	Des Moines	September 13, 11 A.M.	Laying 1½-in. asphalt on 6-in. concrete and one-in. binder course, 1,084 sq. yds., 562.5 ft. cement curb, Library Ave.; also 1,363 ft. curb E. 2d St. and 2,311 yds. vit. brick on concrete, 2 alleys.	W. W. Wise, Bd. Pub. Works.
Ohio	Cincinnati	September 13, noon	Grading, asphalt paving, etc., portions of five streets.	C. N. Dannenhowe, City Engineer.
Wisconsin	Madison	September 13, 2 P.M.	Grading and constructing limestone macadam pavement, etc.	O. S. Norsman, City Clerk.
Ohio	Cincinnati	September 13	Improving Reading Pike, Sycamore township.	Stanley Struble, Pres. Co. Com'rs.
Wisconsin	Milwaukee	Sept'ber 14, 10:30 A.M.	Removing cedar block and macadamizing gutters, etc.; Fourth St.; resurfacing with asphalt Third and W. Water St.	C. J. Poetsch, City Engineer.
South Carolina	Ft. Moultrie	September 14, 11 A.M.	Constructing roads and walks.	J. M. Fulton, Q. M. U. S. A.
Ohio	Cleveland	September 14, 11 A.M.	Improving portions of Euclid road, Euclid township.	Julius C. Dorn, County Clerk.
Dist. of Col'bia	Washington	September 14, noon	Filling approaches to Anacostia bridge, 90,000 cu. yds.	Jay J. Morrow, Eng'r Com'r.
Alabama	Selma	September 14	Constructing cement sidewalks on certain streets.	Louis L. Sparks, City Clerk.
Indiana	Peru	September 14	Grade, drain, pave, 23½ miles gravel rd., Richland twp.; cost, \$40,000.	Chas. Griswold, County Auditor.
Rhode Island	Fort Greble	September 16, 10 A.M.	Constructing drill ground, inc. grading, draining, etc.	Capt. W. C. Metcalf, Q. M. U. S. A.
Iowa	Des Moines	September 16, 1 P.M.	Laying vit. blocks on 6-in. concrete foundation, E 18th and Brooke Streets.	W. W. Wise, Bd. Pub. Works.
Minnesota	St. Paul	September 16, 2 P.M.	Grading Stevens St. from Orleans to Ohio St.	R. L. Gorman, Clk. Bd. Pub. Works.
New Jersey	Weehawken	September 16, 8 P.M.	Paving Clifton road on Telford macadam and concrete base.	Geo. W. Bond, Jr., Civil Eng'r.
Minnesota	Winona	September 16	Brick paving, alley 23; also filling in bridge, 50 ft. long.	H. B. Walling, City Engineer.
Ohio	Fostoria	September 16	Paving and curbing six streets.	Board of Public Service.
Minnesota	St. Paul	September 16	Improving portion of Larpenet Avenue.	Edward G. Krahmer, Co. Auditor.
Ohio	Euclid	September 16	Furnishing and laying macadam, etc., Euclid road.	H. S. Dunlop, Village Clerk.
Indiana	Connersville	September 17, 7:30 P.M.	Constructing two squares gravel streets and cement walks.	Jacob S. Clouds, City Clerk.
Indiana	Logansport	September 17, 10 A.M.	Grading, paving, etc., portions of seven streets.	Chas. S. Tucker, City Engineer.
Illinois	North Chicago	September 17, noon	Grading at Naval Training Station, Great Lakes.	Commandant.
New Hampshire	Concord	September 17, 5 P.M.	Grading and laying trap rock on Main St., Hampstead.	A. W. Dean, State Engineer.
Montana	Billings	September 17, 8 P.M.	Macadamizing 8,500 sq. yds.; 3,900 lin. ft. concrete curb and gutter.	J. D. Matheson, City Clerk.
Minnesota	Eveleth	September 17	Laying 20,000 ft. artificial stone and cement sidewalks.	J. E. Carroll, Consulting Engineer.
Ohio	Cincinnati	September 18, noon	Grading, paving, etc., Grant St.; cost, \$4,670; Burnett Ave., \$7,853.	C. N. Dannenhowe, City Eng'r.
Missouri	St. Joseph	September 18, 5 P.M.	Paving sts. with brick on sand and concrete curb.	Harry L. Murphy, City Clerk.
Pennsylvania	Lancaster	September 18	Constructing 9,381 ft.; also 10,847 ft. road E. Lampeter twp.	Jos. W. Hunter, Harrisburg, Com'r.
New York	Bloomington	September 19, noon	Erecting undergrade crossing Erie RR. at Road No. 154.	Fred'k Skene, Albany, State Eng'r.
Ohio	Cincinnati	September 19, noon	Grading, paving, etc., 3 streets and 2 avenues; cost, \$181,770.	C. N. Dannenhowe, City Eng'r.
Indiana	Frankfort	September 20, 10 A.M.	Constructing gravel road No. 19, 18,408 ft. long.	Chas. F. Cromwell, Co. Auditor.
Indiana	Rockville	September 20, noon	Constructing stone pike, 1½ miles long.	W. B. La Bow, Veederburg, Surv.
Texas	Dallas	September 20, 3 P.M.	Paving, curb, gutter, Ross Ave., Main St., any material; cost, \$100,000 to \$150,000, including curb and gutter.	E. L. Dalton, City Engineer.
Ohio	Wapakoneta	September 20	Grading and graveling Vine Street.	Chas. E. Fisher, City Clerk.
Ohio	Cincinnati	September 20	Improving Montgomery Pike.	Stanley Struble, County Clerk.
Wisconsin	Racine	September 21, 10 A.M.	Grading Yout and Bank St.; 5,422 and 244 cu. yds. excavation.	P. H. Connolly, City Engineer.
Iowa	Des Moines	September 21, 11 A.M.	Paving brick, on 6-in. concrete, 2 sts.; also 700 ft. curb.	W. W. Wise, Bd. Pub. Works.
Ohio	Cleveland	September 21, 11 A.M.	Repairing Wooster pike, inc., 750 cu. yds. bank sand, 150,000 second-quality brick, 800 cu. yds. crushed stone or slag, 325 bbls. Portland cement.	Julius C. Dorn, County Clerk.
Dist. of Col'bia	Washington	September 21, noon	Laying cement sidewalks.	Jay J. Morrow, Eng'r Com'r.
Ohio	Hamilton	September 21	Paving and sanitary sewers, South D St.	Board of Public Service.
Ohio	Ottawa	September 21	Constructing 7 stone roads, Palmer, Monroe and Van Buren twps. inc. 20,000 cu. yds. crushed stone and several miles 6-in. farm tile.	J. P. Maidlow, Co. Engineer.
New Jersey	Woodcliff Lake	September 24, 8 P.M.	Macadamizing 4 roads, distance of 13,768 ft.	H. G. Hering, Jr., Boro. Engineer.
Indiana	Lebanon	September 24	Constructing Ezra Good Gravel Road.	B. F. Simmons, County Auditor.
Pennsylvania	Reading	September 25, 2 P.M.	Constructing subway, etc., under P. & R. Ry. at Spring St.	Elmer H. Beard, City Eng'r.
Illinois	Danville	September 26	Paving Oakwund Ave., Green and Main Sts.; curb and pave Van Buren St.	Board Local Improvements.
Virginia	Manassas	September 28	Macadamizing streets of town; water and light plant.	O. E. Newman, Chm. Com.
Ohio	Steubenville	September 30	Paving Reserve Ave. with fire brick.	T. W. Vance, Clk., Bd. Pub. Serv.
Montana	Billings	October 1, 8 P.M.	Gravel macadam, 58,653 sq. yds.; 3,000 ft. sewer, etc.; 17,480 ft. gutter; also 6,305 sq. yds. shale brick, Dists. 20 and 21.	J. D. Matheson, City Clerk.
Hawaii	Honolulu	October 15, noon	Furnishing 14,000 bbls. Portland cement; 16,500 tons broken stone and 7,000 tons sand.	Capt. C. W. Orwell, Eng'r Corps.
<b>Water Supply</b>				
Georgia	Millen	September 12	Constructing \$30,000 electric light and water plant.	H. Q. Bell, Mayor.
Tennessee	Lawrenceburg	September 13	Hydro-electric Water works and lighting plant, inc. pump; steel tower and c. i. pipe hydrants and valves, pipe laying, etc.	W. G. Kirkpatrick, Jackson, Miss. En'r.
Virginia	Norfolk	September 14, 11 A.M.	Constructing steel tank and tower at Navy Yard.	Commanding Officer.
Philippine Is'ds.	Manila	September 14, noon	Valves and sluice gates for use in gravity water supply.	J. F. Case, Chief Engineer.
New York	Ft. H. G. Wright	September 16, 10 A.M.	Furn. and installing 1,550 ft. 4-in. extension to water system.	Wm. E. Horton, Constr. Q. M. U. S. A.
Ohio	Bryan	September 16, noon	Furnishing 6,600 ft. 4-in. c. i. pipe and 7-fire hydrants.	R. L. Starr, Pres., Water Bd.
Pennsylvania	Philadelphia	September 17, noon	Third street pipe extension, as per Contract No. 131.	Geo. R. Stearns, Dir. Dept. Pub. Wks.
Colorado	Canon City	September 20	Bldg. reservoir at Cottonwood Creek and pipe line to city mains.	C. L. Mitton, City Engineer.
Alabama	Mobile	September 25, 11 A.M.	Bldg. 150,000-gal. steel tank and trestle, pumping plant, ice machine and cold storage at Fort Morgan.	Capt. L. F. Garrard, Jr., Box 605.
New York	Rome	September 25, noon	Bldg. dam at Fish Creek and tunnel 5,500 ft. long.	Knight & Hopkins, Engineers.
Illinois	Summit	September 25, 8 P.M.	Drilling a deep well 1,600 ft. more or less.	Jas. Johnstone, Village Clerk.
New Jersey	Highlands	Sept'ber 25, 8:30 P.M.	Bldg. municipal water works, inc. power house, stand pipe, pipe line, compound duplex steam pumps, air compressor, wells and receiving tank and steam boiler and piping.	Runyan & Carey, Newark, Eng'rs.



## Water Supply—Continued.

Florida.....	Fort Barrancas..	September 26, 11 A.M.	Building 200,000-gal. rein. concrete reservoir, installing steam pump and air compressor and extending water main.....	Lt. A. L. Rhoades, Q. M., U. S. A.
Virginia.....	Manassas.....	September 28.....	Constructing waterworks, electric lighting plant, etc.....	Pressey & Weller, Washington, D. C.
California.....	Los Angeles.....	Sept'ber 30, 3:30 P.M.	Furnishing f.o.b. cars Los Angeles, about 6,000 tons standard hub and spigot cast-iron water pipe; also 2 water tube 300-h.p. boilers and 7,000,000-gal. cross-compound engine.....	Wm. Mulholland, Supt. Water Bd.

## Sewerage

Iowa.....	Des Moines.....	September 13, 11 A.M.	Constructing 652 ft. 12-in. vit. pipe sewer, Capitol Ave.....	W. W. Wise, Board Pub. Works.
Wisconsin.....	Lakemills.....	September 13, 7:30 P.M.	Constructing 1,887 ft. 6-in.; 1,887 ft. 8-in.; 1,225 ft. 10-in.; 823 ft. 12-in.; 1,513 ft. 15-in.; 75-ft. 18-in.; 2,367 ft. 24-in. vit. pipe sewer, etc.....	W. G. Kirchoffer, Madison, Eng'r. W. C. Sullivan, Commercial Bldg., Cincinnati, O., Village Eng'r.
Ohio.....	Oakley.....	September 14.....	Constructing sewers in Dist. No. 2.....	B. F. Faust, Clk. Bd. Pub. Serv.
Ohio.....	Canton.....	September 16, noon..	Constructing sanitary sewer, N. Cleveland Ave., inc. 2,500 ft. 5-in., 385 ft. 6-in. vit. pipe; 1,600 ft. house con. 11 manholes, etc.....	Frank Spilling, City Clerk. Board of Public Service. George Davis, City Clerk. C. W. Kelly, City Engineer. Robert Hooke, City Engineer.
Indiana.....	Linton.....	September 16, 4 P.M.	Constructing sanitary sewer system, inc. 13 miles of sewer with disposal plant; cost, \$64,800.....	Alex. Potter, N. Y. City, Cons. Eng. Geo. R. Stearns, Dir. Pub. Works. Bird S. Coler, Boro. President.
Ohio.....	Fostoria.....	September 16.....	Constructing sewers in Columbus Ave. and Town St.....	W. B. Fawcett, Secy. Bd. Pub. Wks. Geo. W. Fuller, N. Y. City, Eng'r.
Ohio.....	Barberton.....	September 16.....	Improving main and local storm sewers, Dist. No. 1.....	W. G. Kirkpatrick, Jackson, Eng'r. W. O. Dittman, Village Clerk.
Connecticut.....	New Haven.....	September 16.....	Constructing sewers in portions of several streets.....	Dennis Saylor, City Clerk. Board of Public Service. Commandant.
Tennessee.....	Chattanooga.....	September 16.....	Constructing Chestnut St. sewer from Ninth St. to the river.....	T. F. Dye, Sec'y Bd. Trus. T. W. Vance, Clk. Bd. Pub. Serv.
New Jersey.....	South Orange.....	September 17, 8 P.M.	Bldg. 2 sections sanitary sewers; 3,460 ft. 10-in., 15,080 ft. 8-in. vit. pipe, 63 manholes, 12 flush tanks. Maplewood Dist.; 250 ft. 10-in., 16,648 ft. 8-in. vit. pipe, 47 manholes, 13 flush tanks S. O. Heights Dist.....	Town Clerk. L. A. Washington, City Engineer. J. D. Matheson, City Clerk. Constructing Quartermaster.
Pennsylvania.....	Philadelphia.....	September 17.....	Bldg. sewer connecting Upper Roxborough, Cont. No. 132.....	
New York.....	Brooklyn.....	September 18, 11 A.M.	Bldg. sewer Flatbush Ave.; basins, Roebing St.....	
California.....	Oakland.....	September 18.....	Constructing concrete and iron stone intercepting sewer in Wood St.....	
Maine.....	Togus.....	September 19, noon..	Improving sewer and drainage system, Soldiers' Home.....	
Mississippi.....	Canton.....	September 19, 8 P.M.	Material and labor for system of house sewers, complete, inc. 7 miles, 18 to 8-in-pipe.....	
Ohio.....	Gibsonburg.....	September 20.....	Constructing main sewer of tile, inc. house connections, etc.....	
Nebraska.....	Aurora.....	September 21, noon..	Constructing sewer system, to cost, \$10,500.....	
Ohio.....	Hamilton.....	September 21.....	Constructing sanitary sewers, etc., South D St.....	
Illinois.....	North Chicago.....	September 27, noon..	Laying sewers and drains at Naval Training Station.....	
Ohio.....	Delaware.....	September 27, 6 P.M.	Constructing sewage disposal plant, Girls' Industrial School.....	
Ohio.....	Steubenville.....	September 30.....	Constructing sewers in three streets.....	
California.....	Fairfield.....	September 30.....	Constructing sewerage system to cost \$20,000.....	
Kentucky.....	Paducah.....	October 1, 3 P.M.	Bldg. 14 miles 6-in. vit. pipe laterals in 6 to 12-ft. trench.....	
Montana.....	Billings.....	October 1, 8 P.M.	Laying 3,000 ft. sewer, 12 manholes, 15 catch basins, paving, etc.....	
Florida.....	Fort Dade.....	October 3, 8 P.M.	Repair and extension to sewer outlet.....	

## Public Buildings

Iowa.....	Des Moines.....	September 12, 11 A.M.	Erecting 2-story brick fire station; also plumbing and heating..	W. W. Wise, Bd. Pub. Wks.
Florida.....	Marianna.....	September 12, noon..	Erecting \$20,000 high school building.....	J. C. Folsom, Bldg. Com'r.
New York.....	Rome.....	September 12, 3 P.M.	Constructing approaches at U. S. Post Office.....	James Knox Taylor, Wash., D. C.
Illinois.....	Chicago.....	Sept'ber 13, 11 A.M.	Constructing engine house at Lake View pumping Station.....	John J. Hanberg, Com'r Pub. Wks. Roe & Siemens, Architects.
Missouri.....	Kansas City.....	September 13.....	Erecting fire station No. 4.....	Bur. Yds. & Docks, Navy Dpt. Jay J. Morrow, Eng'r Com'r.
Dist. of Col'bia.....	Washington.....	Sept'ber 14, 11 A.M.	Erecting three brick buildings at Naval Hospital Reservation.....	Charles A. Johnson, Co. Auditor.
Dist. of Col'bia.....	Washington.....	September 14, noon..	Erecting addition to Petworth School building.....	G. L. Heins, Albany State Arch.
Indiana.....	Crown Point.....	September 14, noon..	Erecting addition to County Court House.....	Maj. C. A. F. Flagler, Wilmet'tn, Del.
New York.....	Hudson.....	September 14, 1 P.M.	Erecting complete, 3 cottages, etc., to Industrial Building.....	T. Edw. Sheehan, Boston, Arch.
New Jersey.....	Cape May.....	September 14.....	Constructing a building.....	L. M. Wood, Topeka, Architect.
New Hampshire.....	Hooksett.....	September 15.....	Erecting \$150,000 academy building.....	W. S. K'fman & Son, Richm'd, Arch.
Kansas.....	Chapman.....	September 15.....	Erecting stone addition to County High School.....	Spencer Cosby, Maj. Eng'r's, U. S. A.
Indiana.....	New Castle.....	September 16, noon..	Heating and plumbing, 2 new bldgs., Ind. Village for Epileptics.....	James Knox Taylor, Superv. Arch., Washington, D. C.
Dist. of Col'bia.....	Washington.....	September 16, noon..	Erecting machine shop at Washington hall Filtration plant.....	John K. Dow, Spokane, Architect.
New York.....	Buffalo.....	September 16, 3 P.M.	Constructing (except elevators) U. S. Marine Hospital.....	James Knox Taylor, Wash., D. C.
Washington.....	Pullman.....	September 16.....	Constructing library and assembly hall bldg. and heating for same for State College.....	W. B. Jones, County Auditor. Gaggin & Gaggin, Architects.
Pennsylvania.....	Pittsburg.....	September 16.....	Constructing (except elevators) U. S. Marine Hospital.....	Alsup & Woods, Architects.
Ohio.....	Youngstown.....	September 16.....	Erecting addition to Children's Home.....	Capt. B. B. Hyer, Quartermaster. Regents, Univ. of Kansas. Board of Education.
New York.....	Syracuse.....	September 16.....	Erecting school with 16-class rooms and assembly hall.....	Board of Water Supply. James Knox Taylor, Wash., D. C.
Tennessee.....	Memphis.....	September 16.....	Erecting a 12-room school; cost, \$40,000.....	Edw. Russell, Chm. Bldg. Com.
Virginia.....	Fort Myer.....	September 16.....	Constructing addition to Cavalry Drill Hall.....	Henry Wildhagen, Ashland, Arch.
Kansas.....	Lawrence.....	September 17, 11 A.M.	Erecting Eng. Bldg.; also furn., etc., Univ. Kansas.....	E. A. Bowd, Lansing, Mich., Arch.
North Dakota.....	Valley City.....	September 17, 2 P.M.	Superstructure of school; destroyed by fire; cost, \$25,000.....	Howland Russel, Milwaukee, Arch.
New York.....	New York.....	September 17, 2 P.M.	Erecting 2-story and attic bldg. near High Falls, Marletown twp.....	Perkins & Hamilton, Architects.
California.....	San Francisco.....	September 17, 3 P.M.	Repairs, alterations, etc., U. S. Mint Building.....	Gustave W. Drache, Architect.
New Jersey.....	Montclair Heights.....	September 17.....	Erecting boiler house and installing heating plant, Normal Sch.....	Fred. Gelinas, Ottawa, Sec'y, D. P. W.
Wisconsin.....	Tomahawk.....	September 17.....	Furnishing material and erecting \$40,000 school.....	James Knox Taylor, Superv. Arch.
Michigan.....	Agricult'l College.....	September 18, noon..	Constructing agricultural bldg., Mich. Agr. College.....	J. Ira Jones, Architect.
Wisconsin.....	Delavan.....	September 18, noon..	Erecting Industrial bldg., etc., at Wisconsin School for Deaf.....	F. Parker, Secretary.
Illinois.....	Chicago.....	September 18, 1 P.M.	Erecting gymnasium and field-house bldg. for Park Com'rs.....	E. V. Richards, Bennettville, Arch.
Ohio.....	Cincinnati.....	September 18.....	Erecting Public Comfort Stations under Esplanade.....	J. E. Winship, Clk., Sch. Dist. 7.
Ontario.....	Kincardie.....	September 18.....	Erecting a public building.....	Dr. H. B. Meredith, Superintendent.
Iowa.....	Muscatine.....	September 19, 3 P.M.	Construction U. S. Post-office.....	James Knox Taylor, Wash., D. C.
Oklahoma.....	Lawton.....	September 19, 8 P.M.	Constructing 8-room brick ward, public school.....	B. A. Benson, Treasurer. Harvard Hall, Supt. Ind. School.
Alberta.....	Calgary.....	September 20.....	Erecting general hospital, 2 bldgs., 3 stories, red brick, stone trimmings; also nurses' home; cost, \$140,000.....	Jos. E. Mills, Detroit, Mich., Arch.
South Carolina.....	Latta.....	September 23, noon..	Erecting brick construction school for high school.....	Irvin D. Aldrich, Sioux Falls.
Illinois.....	Garrett.....	September 23.....	Plans for 4-room brick school, steam-heated; cost, \$8,000.....	J. S. Spear, Supt. Ft. Lewis School.
Pennsylvania.....	Danville.....	September 24, noon..	Erecting three buildings, State Hospital for Insane.....	James Knox Taylor, Wash., D. C.
Ohio.....	Hamilton.....	September 24, 3 P.M.	Constructing, complete, U. S. Post Office Building.....	James Knox Taylor, Wash., D. C.
Virginia.....	Nat. S'd'rs' Home.....	Sept'ber 26, 1:30 P.M.	Bldg. 3 barracks, mess hall and addition to hospital.....	Geo. Burnham, Architect.
California.....	Riverside.....	September 26, 2 P.M.	Erecting cottages, stable, mess hall, etc., all brick.....	E. W. Field, County Auditor.
Iowa.....	Muscatine.....	September 26, 2 P.M.	Furn. material and erecting, complete, fireproof Court House.....	A. C. Longyear, N. Y. City, Arch.
South Dakota.....	Brookings.....	September 26.....	Erecting law building at Vermillion and ladies' dormitory at Brookings; each to cost \$40,000.....	Commandant.
Colorado.....	Hesperus.....	September 27.....	Erecting school, office, moving bldg., imp. water system, etc.....	Special Bldg. Com. County Board, James Knox Taylor, Wash., D. C.
Alabama.....	Selma.....	September 30, 3 P.M.	Erecting, complete, U. S. Post Office.....	E. S. Hall, County Clerk.
Wisconsin.....	Eau Claire.....	October 1, 3 P.M.	Erecting, complete, Federal Building.....	James Knox Taylor, Wash., D. C.
Maine.....	Portland.....	October 1.....	Plumbing the County Building.....	James Knox Taylor, Wash., D. C.
North Dakota.....	La Moure.....	October 3, 10 A.M.	Plans and specifications for Court House, \$60,000 to \$100,000.....	
New Jersey.....	Bayonne.....	October 3, 8:30 P.M.	Constructing public school No. 9.....	
Louisiana.....	New Orleans.....	October 5.....	Hot water heating plant at Naval Station; cost, \$25,000.....	
Wisconsin.....	De Pere.....	October 5.....	Plans for 3-story and basement Court House and 2-story basement jail, fireproof, complete; cost, \$300,000.....	
Maryland.....	Baltimore.....	October 7, 3 P.M.	Erecting and mechanical equipment, Federal Building.....	
Wisconsin.....	Green Bay.....	October 15, noon..	Erecting Court House, County jail and Sheriff's residence of stone and brick; to cost \$300,000.....	
Illinois.....	Peoria.....	October 17, 3 P.M.	Erecting extension and remodeling Federal Building.....	
Iowa.....	Des Moines.....	October 21, 3 P.M.	Erecting, complete, Federal Building.....	

## Bridges

Nebraska.....	Dunbar.....	September 13, noon..	Constructing 50-ft. steel bridge, 14-ft. roadway on 30-in. steel tubes, 222 ft. long, 12-ft. approaches, 7 miles from Dunbar.....	Chas. H. Busch, County Clerk.
Ohio.....	Lorain.....	September 13, 1 P.M.	Erecting steel bridge, concrete floor; also stone abutments for two bridges.....	L. A. Fauver, County Surveyor.
Ohio.....	Oberlin.....	September 13, 1 P.M.	Bridge work for County.....	Charles Chandler, County Clerk.
Colorado.....	Leadville.....	September 13.....	Erecting an 80-ft. concrete bridge.....	G. Houston, Denver, Den. St. Eng'rs.
Ohio.....	Cleveland.....	September 14, 11 A.M.	Constructing concrete steel bridge in Strongsville twp.....	Julius C. Dorn, County Clerk.
Pennsylvania.....	Scranton.....	September 14, 11 A.M.	Purchase and removal of four bridges.....	C. R. Acker, Dir. D. P. Works.

## Bridges—Continued.

Ohio.....	Eaton.....	September 14, noon..	Constructing approaches to bridge in Dixon township.....	G. W. Edison, County Auditor.
California.....	Adin.....	September 16, 10 A.M.	Constructing bridge over Ash Creek at Main Street.....	L. S. Smith, Clerk, Supervisors.
California.....	Madera.....	September 16, 10 A.M.	Constructing bridge across Horace Gold Creek.....	County Supervisors.
Minnesota.....	Minneapolis.....	September 16, 11 A.M.	Constructing bridge No. 200, Contract No. 19.....	Hugh R. Scott, County Auditor.
California.....	Ukiah.....	September 16, 2 P.M.	Erecting bridge over gulch on Clow Ranch, 2d Superv. Dist.....	D. H. Lawson, Clk., Supervisors.
Mississippi.....	Vicksburg.....	September 16.....	Erecting 2-rein. concrete bridges; 100 cu. yds. concrete each.....	H. J. Trowbridge, City Clerk.
Texas.....	Houston.....	September 18.....	Erecting 687-ft. bridge; cost, \$40,000, over San Jacinto River.....	County Auditor.
Ohio.....	Cincinnati.....	September 20, noon..	Reconstructing, etc., structural steel work, Liberty St. viaduct..	C. N. Danenhowe, Chief Eng'r.
Colorado.....	Greeley.....	September 20.....	Erecting reinforced concrete bridge, 135 ft. long.....	G. Houston, Denver, Dep. St. Eng'r.
Ohio.....	Tiffin.....	September 20.....	Repairing Perry St. bridge, to cost \$7,500.....	County Commissioners.
Ohio.....	Newark.....	September 23.....	Erecting 105-ft. span riveted steel truss bridge.....	J. L. Gilpatrick, County Auditor.
Michigan.....	Bay City.....	September 23.....	Dredging or otherwise constructing 50,000 cu. yd. embankment, forming south approach to Belinda St. Bridge.....	John H. Bloomshield, Eng'r Bridge Com.
Chile, So. A.....	Santiago.....	September 30.....	Erecting several bridges in Chile.....	Wessel, Duval & Co., N. Y. City.
Oklahoma.....	Guthrie.....	September 31.....	Erecting bridge, Cimarron River, Dist. No. 31, Lawrie twp.....	County Commissioners.
Florida.....	Palatka.....	October 9.....	Erecting \$90,000 bridge over St. John's River.....	R. R. Price, County Engineer.
California.....	Los Angeles.....	October 14, 11 A.M.	Erecting rein. concrete bridge over Los Angeles River at 7th St.	H. G. Parker, Bridge Engineer.
Manitoba.....	Dunrea.....	October 15, noon.....	Constructing steel bridge, two 100-ft. spans, on concrete and boulder masonry foundation over Souris River.....	J. H. Putnam, Mun. Riverside.
China.....	Canton.....	October 19.....	Constructing steel cantilever and girder bridge, 1,102 ft. long, in Front Reach, 740 ft. west of Dutch-folly Fort.....	Canton River Bridge Co., Ltd.

## Lighting and Electricity

Georgia.....	Millen.....	September 12.....	Constructing \$30,000 electric light and water plant.....	J. B. McCrary & Co., Atlanta, Eng'rs
Virginia.....	Fort Myer.....	September 12.....	Furn. and installing acetylene fixtures, Isolation Hospital.....	Capt. B. B. Hyer, Q. M., U. S. A.
Tennessee.....	Lawrenceburg.....	September 13.....	Material and labor for three 30-in. turbines; dynamo induction motor and arc lights; centrifugal or triplex pump; steel tower and tank; c. i. pipe; hydrants and valves; cyclopean or rein. concrete pen stocks and power house; installing machinery electric light construction; pipe laying.....	W. G. Kirkpatrick, Jack, Miss. Eng. Commanding Officer.
New York.....	New York.....	September 14, 11 A.M.	Motor generator sets and accessories for navy yard.....	G. L. Heins, Albany, State Arch.
New York.....	Napanock.....	September 14, noon..	Furn. and erecting all structural steel and iron work for power-house and stack and conduits Eastern N. Y. Reformatory.....	John Coate, Village Clerk.
Ohio.....	Milton.....	September 16.....	Lighting village with 30 arcs, and few incandescent clusters, and franchise for commercial lighting.....	Chief Signal Officer, War Dept.
Dist. of Col'bia.	Washington.....	September 16.....	Furnishing 200 field acetylene lanterns for army.....	Frank L. Packard, Architect.
Ohio.....	Columbus.....	September 17, noon..	Furnishing and installing, complete, at power house, Columbus State Hospital, engine, dynamo and switch board.....	James G. Pinson, Secy. Bd. Pub. Wks. Commanding officer.
Michigan.....	Wyandotte.....	September 17, 8 P.M.	Furnishing electrical machinery, inc. 300 h. p. water-tube boiler; 240 k. w. generating unit, complete; generator panel; feeder panel; series enclosed a. c. arc lamp system.....	G. L. Meade, Chm. Co. Com'rs.
New Hampshire.	Portsmouth.....	September 21, 11 A.M.	Erecting extension to power house at navy yard.....	O. E. Newman, Chm. Com.
New York.....	Rochester.....	September 20.....	Furn. and installing 150 h. p. 130-lb. pressure internal furnace boiler in Co. power house; also electric lighting plant in basement of Court House.....	Maj. J. M. Carson, Q. M., U. S. A.
Virginia.....	Manassas.....	September 28.....	Constructing electric light plant, waterworks, etc.....	Cecil Goddard, Winnipeg, Cons. Engr.
New York.....	West Point.....	September 30, noon..	Furn. and installing combination gas and electric light fixtures, etc., old and new Cadet barracks.....	Maj. Harry Taylor, Eng'r Corps.
Brit. Columbia.	Revelstoke.....	September 30, 6 P.M.	Enlarging hydro-electric plant, inc. 500 h. p. producer gas plant and engines, generators and exciters, transmission machinery, switchboards, wiring and rearrangement of present plant.....	Chairman Board of Control.
Connecticut....	New London....	September 30.....	Furnishing 40 25-k. w. generating sets, complete.....	R. N. Ellis, Supt. Light Plant.
Manitoba.....	Winnipeg.....	October 1, noon.....	Constructing general works and supply of equipment for hydro-electric station at Point du Bois.....	Ion Simons, City Electrician.
Florida.....	Jacksonville.....	October 4.....	Furnishing and setting up 1,500 k. w. steam turbo-generator, 50 k. w. motor driven exciter.....	Municipal Council.
South Carolina.	Charleston.....	November 15, noon..	Lighting sts. and public bldgs., 1, 2 or 4 yrs., inc. 500 arc. lights or equivalent in 5 ft. gas burners.....	
India.....	Calcutta.....	December 31.....	Lighting town by electricity, gas, oil, or other method; now lighted by 9,300 gas lamps of 24 c.p. and 2,400 c.p. oil lamps.....	

## Miscellaneous

New York.....	New York.....	September 11, noon..	Furnishing and delivering 50 street sweeping machines.....	W. Bonsel, Com'r St. Cleaning.
New Jersey....	Hoboken.....	September 11, 8 P.M.	Removal of ashes, garbage, rubbish, str. sweepings, etc., 1 year..	James H. Londrigan, City Clerk.
Indiana.....	Ft. Benj. Harrison	September 13, 10 A.M.	Erecting a garbage crematory.....	Geo. H. Penrose, Q. M., U. S. Army.
Ohio.....	Lorain.....	September 14.....	Constructing pile and concrete pier, 250 ft. long; pile and timber dock and bulkhead, 375 ft. long each.....	Geo. N. Damon, Clk. Bd. Pub. Serv.
Illinois.....	Chicago.....	September 16, 11 A.M.	Furnishing 25,000 ft. 2½-in. rubber-lined cotton hose, etc.....	James Horan, Fire Marshal.
California.....	Stockton.....	September 16.....	Bldg. concrete bulkhead north side channel; cost, \$10,000.....	R. C. Tumelty, City Engineer.
Nova Scotia....	Breton Cove.....	September 18.....	Constructing extension to landing pier.....	Fred. Golas, Ottawa, Sec'y B. P. W.
Louisiana.....	New Orleans....	September 20.....	Constructing 25,000 cu. yds. Lake Borgne Levee District.....	Capt. I. F. McIndoe, Eng'r Corps.
Massachusetts.	Boston.....	September 30.....	Dredging in Mystic River.....	Maj. Edw. Burr, Eng'r Corps.
New Jersey....	Cold Spring.....	October 3.....	Constructing stone jetties, Cold Spring Inlet.....	Maj. C. A. F. Flagler, Wilm't'n, Del.

## STREET IMPROVEMENTS

**San Francisco, Cal.**—The Finance Committee has recommended that \$600,000 for streets and sewers be set aside under the control of the Street Committee.

**Hartford, Conn.**—The Street Board has decided to pave Asylum street; bids will be advertised for.—F. L. Ford, City Engineer.

**New Britain, Conn.**—The city contemplates doing a large amount of street paving next year; plans are being prepared.—F. H. Oldershaw, City Engineer.

**Pensacola, Fla.**—Bids will be readvertised for paving 170,700 square yards and setting 115,950 lineal feet curb, bids received August 27 being considered too high.—T. Chalkley Hatton, Chief Engineer.

**Cairo, Ill.**—No bids were received for the Washington avenue improvement; bids will be readvertised.—W. B. Thistlewood, City Engineer.

**Champaign, Ill.**—Ordinances have been passed providing for the paving of three blocks of city streets; estimated cost, \$6,000.

**East St. Louis, Ill.**—Council has passed an ordinance for the construction of a ten-foot granitoid sidewalk along Collinsville avenue.

**St. Charles, Ill.**—Council has accepted plans submitted by the C. G. W. Railway Company for bridge across tracks at East Fifth street.

**Bluffton, Ind.**—Council has decided on the use of paving brick for constructing 100 new street crossings.

**Huntington, Ind.**—The City Engineer has been instructed by Council to readvertise for bids for the construction of a pavement

on South Whitelock street.

**Indianapolis, Ind.**—The Board of Works has ordered the construction of brick roadways in Beecher street and creosoted wooden blocks in Twenty-fourth street and an alley; also for cement walks and several pipe sewers.—Blaine H. Miller, City Engineer.

**South Bend, Ind.**—Council has decided that Fellows street be opened its entire length.

**Iola, Kan.**—The City Engineer has been directed to advertise for bids for constructing seven additional blocks of paving.

**Baltimore, Md.**—The city will, on November 5, offer for sale \$6,000,000 paving and park improvement bonds.

**Detroit, Mich.**—The construction of brick, stone, artificial stone, cement or concrete sidewalks on a large number of streets has been ordered by the Department of Public Works.—J. J. Haarer, Commissioner.

**Duluth, Minn.**—Ramsey street will be widened, and telephone poles between Central and Forty-ninth avenues west be moved to a line 23½ feet on either side of a center line of the street.

**Duluth, Minn.**—The Street Committee and the officials of the Great Northern Railway have under consideration plans for a subway at Eighteenth street.

**South Omaha, Neb.**—An ordinance is before Council authorizing an issue of \$42,000 paving bonds.

**Schenectady, N. Y.**—The city and railway officials have agreed to abolish grade crossing at Seneca street.

**Troy, N. Y.**—The Public Improvement Commission has rejected four bids for paving Third avenue because of an error made

in the advertising for the proposals; new proposals will be advertised for.

**Akron, O.**—Dan O'Marr was awarded the contract for the improvement of Cuyahoga street; Akron granite blocks will be used.

**Alliance, O.**—Bonds are being advertised for the proceeds from which will be spent for street improving; \$20,000 will be expended.

**Bellefontaine, O.**—Council has decided that Detroit street shall be paved from Chillicothe to Buckingham; the improvement will be a very large one, but President McCracken, of Council, states that bids will likely not be opened before spring.

**Celina, O.**—Bids will be received, September 23, for \$5,525 bonds for improving Market street.—C. W. Rish, City Clerk.

**Cincinnati, O.**—Ordinances have been passed for the issue of \$10,000 park bonds, \$600,000 street improvements bonds and \$78,000 paving bonds.—Edward Henderson, City Clerk.

**Elyria, O.**—On account of the complaint of property owners on Washburn and Harrison streets it is likely that the City Engineer will have to make new plans for this improvement; North street plans may also have to be changed.

**Fremont, O.**—Bonds are being advertised for \$4,300, to be used for improving Lincoln street.

**Lorain, O.**—The B. P. S. has asked the Barber Asphalt Co. for a release of contract for the paving of Penfield avenue.

**Millford Center, O.**—A \$19,000 bond issue will probably be authorized for paving State, Mill streets and some others, together with



other miscellaneous improvements.—F. G. Fullington, Mayor.

**Oxford, O.**—An ordinance has passed to issue bonds for extending and improving the water works.

**Springfield, O.**—The City Engineer has been directed to prepare plans and specifications for improving several streets by paving and cement walks.

**Toledo, O.**—The Board of Public Service will readvertise for new bids on the paving of Orange street; the contract was two years ago awarded to J. C. Garland, but for some misunderstanding it will be replaced.

**Wooster, O.**—Residents of Spink street are circulating a petition for paving that street.

**Zanesville, O.**—Council has decided to pave certain portions of Wayne avenue with brick on a concrete foundation; about one mile of paving is required; bids are invited.

**Reading, Pa.**—Council has authorized the repairing of Pearl street and the construction of a gutter at Canal and Bingham streets, and will also spend \$30,000 in improving Fifth street.

Council has voted that the Board of Public Works and Chief Commissioner of Highways and Sewers be directed to proceed to make all needed repairs to highways, gutters, curbing, sidewalks and street crossings.

**Bowie, Tex.**—An election will be held to vote on the question of issuing \$15,000 bonds for street improvements.

**Comanche, Tex.**—A special election will be held to vote on the question of issuing \$170,000 road improvement bonds.

**Fort Worth, Tex.**—Commissioner Davidson has recommended to the City Commission that every street in the business district be paved, aggregating about seven miles; vitrified brick to be used on the greater number of streets; bitulithic on the remainder; competitive bids will be asked for the vitrified brick.

**Texarkana, Tex.**—About \$250,000 will be expended in paving certain streets with brick on concrete foundation.

**Salt Lake City, Utah.**—The bid of P. J. Moran, of Salt Lake, for paving Wall avenue between Twenty-fifth and Twenty-sixth streets for \$19,300 has been rejected, and new bids asked for; the City Engineer has been instructed to advertise for rock to macadamize Washington avenue from Twenty-sixth to Thirtieth streets and Twenty-sixth street, from Washington to Jefferson avenues.

Council has approved the application of the citizens to pave Twelfth East street with asphalt, and authorized the engineer to submit estimates.

**Spokane, Wash.**—Council has directed the City Engineer to prepare estimates for paving certain streets with vitrified brick and asphalt pavement.—Address City Clerk. Forty miles of thoroughfares will be paved with asphalt or similar material next year if the plan formulated by Graham B. Dennis, Chairman of the Publicity Committee of the Chamber of Commerce is adopted by Council; resolutions urging the Council to pave more streets in the warehouse and residence districts were passed and transmitted to Council by L. G. Monroe, Secretary of the Chamber.

**Florence, Wis.**—The citizens have voted \$6,000 bonds for improving streets.—Address City Clerk.

## SEWERAGE

**Alamosa, Col.**—Plans are being prepared by B. D. Critchlow for constructing sewerage system.

**Canton, Ga.**—An election is to be held, September 21, to vote on the question of issuing \$29,500 sewer, water works and electric light bonds.

**Mullan, Ida.**—The construction of sewers is being considered.

**Plainfield, N. J.**—Bids will be received by Common Council for the \$68,000 issue of sewer improvement bonds, on October 7 at 8 p. m.

**Akron, O.**—Bids will be received, September 19, for \$18,900 4½ per cent. semi-annual bonds for constructing a main sewer.

**Alliance, O.**—City Engineer Gyger states that he has succeeded in locating a very satisfactory route for the proposed sewer line to be built as an outlet from the sewerage disposal plant.

**Canton, O.**—The engineer has been instructed to prepare plans for a storm water sewer in Linden avenue.

**Circleville, O.**—The question of \$125,000 bond issue for the construction of a sewer system has been favorably acted on.

**East Liverpool, O.**—Private interests are asking for a permit to build a sanitary sewer at the lower end of the village of Chester.

**Eaton, O.**—C. F. Ressler, Clerk, states that the ordinance to bond the town in the sum of \$125,000 for the construction of a sewer

system will doubtless pass its final reading.

**Fremont, O.**—President Stausmyer, of Council, states that the ordinance for the construction of a sewer on West street has passed Council and bids for its construction are about to be invited.

**Ironton, O.**—Council will borrow \$7,000 for the construction of a sewer in district No. 6.

**Marion, O.**—The Clerk has been instructed to advertise for bids for a storm water sewer on Grand avenue; the sewer will be about 200 feet long.

**Paulding, O.**—Council has decided to construct sewer in Jackson street.

**Phillipsburg, O.**—A sewerage system will probably be installed.

**Stillwater, Okla.**—Council has directed plans and estimates to be prepared for building sewer system.

**Allegheny, Pa.**—Council has directed plans to be prepared for building sewer plant at the City Home.

**Carlisle, Pa.**—Council has approved specifications submitted by Philadelphia engineers for the installation of a sewerage system, which will cost \$189,000; the specifications have been referred to the State Board of Health for approval.

**McKeesport, Pa.**—Council has authorized a sewer inlet at Evans avenue and Irwin street, and the extension of the Fourteenth avenue sewer.

**Reading, Pa.**—Council has voted against the measure to increase the bonded debt of the city by \$40,000 for the construction of intercepting storm water sewers.

## WATER SUPPLY

**Johnstown, Col.**—The estimated cost of the proposed water works is \$20,000.

**East Hartford, Conn.**—A 4-inch water main will be laid in Bigelow street.

**Shelby, Ida.**—A water works system will be installed at an estimated cost of \$6,500.—Fred C. Michelson, City Clerk.

**Elkhart, Ind.**—Council has under consideration a request from the Board of Public Works for an appropriation of \$500 to the water fund, "for the purpose of securing the services of an expert engineer to assist the Board in preparing to receive bids for a new water franchise."

**Lindsay, I. T.**—Bonds, \$25,000, have been voted for water supply.—Address City Clerk.

**Indianola, Ia.**—The citizens have voted to purchase for the city the water plant that has been owned for several years by a Kansas City company.

**Baltimore, Md.**—The Water Board has under consideration the rebuilding of the Mt. Royal Pumping Station at North avenue.—Address City Water Works Engineer Quirk.

**Vernon Center, Minn.**—A water works system will be installed, including engine, tank and mains; estimated cost, \$8,000.

**Clinton, Mo.**—The proposition to issue \$70,000 water works bonds failed to carry.

**Billings, Mont.**—Council has decided to offer the Billings Water Power Company \$140,000 for its pumping plant and distributing system, and in event of the refusal of such offer to appoint a committee of appraisers, who shall fix the value of the property.

**Beaver City, Neb.**—Bids will be received, September 26, for the purchase of \$25,000 20-year 6 per cent. water works bonds.—W. I. Leonard, City Clerk.

**Franklin, Neb.**—The citizens have voted \$17,000 bonds for water works.—Address City Clerk.

**Mitchell, Neb.**—Bids will be received, September 19, for the purchase of \$6,000 6 per cent. 30-year water bonds.—H. O. Eastman, Village Treasurer.

**Omaha, Neb.**—Minard Holman, Consulting Engineer of St. Louis, Mo., is preparing plans for the construction of a water plant for the city.

**Trenton, N. J.**—The Board of Water Commissioners has decided to lay a twelve-inch main to connect Hillcrest with the new high power pumping station and standpipe being erected at the reservoir; the twelve-inch main will start at the Pennington avenue gate and will run down Prospect street and along Stuyvesant avenue; about 1,000 feet of pipe will be laid in each thoroughfare; Superintendent Bugbee has reported that during the past month 1,850 feet of pipe was laid, as follows: Williams street, 240, four-inch; Princeton avenue, 288, four-inch; Grand street, 180, four-inch; South Clinton avenue, 180, four-inch; Quarry alley, 336, four-inch; Schiller avenue, 366, six-inch, and Prospect street, 264, twelve-inch.

**Verona, N. J.**—Plans are being made to raise \$53,000 for a water supply.

**Washington, N. J.**—The Washington Water Company propose plant improvements to cost about \$20,000; this includes a new storage reservoir above Roaring Rock to supply demands in time of drought, and the laying of two miles of new mains in the borough.

**Fishkill, N. Y.**—A franchise has been granted to a New York company to lay water pipes through the village and sell water; Van Wyck lake will be the source of supply.

**Lockport, N. Y.**—Council has directed Mayor Baker, City Clerk Bennett and City Engineer Frehsee to sign an amended statement and make a revised map of the route of Lockport's municipal water supply system from the pumping station at North Tonawanda to Sawyer's creek in Wheatfield; the new map will show the lands required for right of way, streets, roads, avenues and highways.

**Mechanicsville, N. Y.**—It is estimated that the proposed changes in the water system will cost \$8,274.

**Troy, N. Y.**—Superintendent Shields, of the Water Works Department, has decided to erect a dam in Long Pond; it is believed that a dam at this place can be made of sufficient strength to impound water to such an extent that the pond would be a reservoir for the high service, which supplies the East Side; as this section of the city is continually growing as a residential district, it is of the utmost importance to have a water supply to meet any emergency; Long Pond is fed by springs.

**Casselton, N. D.**—A water works and sewerage system will be constructed.—C. A. Hopeman, of Moorhead, Minn., is Engineer.

**Cambridge, O.**—At the November election the citizens will vote on the proposition for securing a better water supply.

**Columbus, O.**—The bid of Westwater & Casey for laying water mains from the filtration plant to the city is \$164,681.

**New Lexington, O.**—Council will pass the resolution calling for a \$35,000 bond issue for constructing a water works.

**McKeesport, Pa.**—The Water Commissioners have authorized the laying of a 12-inch water main in Ash street.

**Nashville, Tenn.**—Report of Dr. C. S. Brown on water supply recommends improvements estimated at \$1,987,000.

**Bay City, Tex.**—Estimated cost of proposed water works system is \$18,000.—J. Sutherland, Mayor.

**Temple, Tex.**—An election will be held, October 2, to vote on issue of bonds for the purchase of water works plant.—Address City Clerk.

**Fair Haven, Vt.**—The water supply system will be extended by constructing additional reservoirs and laying one mile of 8-inch pipe; estimated cost, \$15,000.—Washburn Faucher, Engineer.

**Pulaski, Va.**—Surveys are being made for constructing reservoir.—G. H. Derrick, Engineer.

**Spokane, Wash.**—C. V. Roberts, of Philadelphia, Pa., has come to Spokane to look over the ground with a view to installing a filtration plant, which, to accommodate the needs of the city, will cost \$400,000; this will give a plant of 20,000,000 gallons capacity, requiring eight months to put into operation.

**Follansbee, W. Va.**—Mayor T. J. McMann has been in conference with D. J. Sinclair, of Steubenville, relative to the construction of the water works system, which the latter planned some time ago to locate here.

**Madison, Wis.**—One or two 12-inch artesian wells and a 1,000,000 gallon concrete storage reservoir basin will be built.—John B. Helm, Superintendent.

**Minnedosa, Man., Can.**—Water will be obtained from Clear lake, 30 miles north, for the proposed power plant.—Address E. O. Dendson.

**Ottawa, Ont., Can.**—Plans are being prepared for a new reservoir for Baywater; cost about \$150,000.

## LIGHTING AND ELECTRICITY

**New Decatur, Ala.**—The Decatur Light, Power & Fuel Company, which supplies both Decatur and New Decatur with light and power, will extend \$70,000 in improvements.

**San Francisco, Cal.**—John A. Britton, President of the San Francisco Gas & Electric Company, has submitted to the Artificial Light Committee of the Board of Supervisors a plan showing the locations of the lamps to be restored in the burned district; the company will install 1,300 gas lamps and 63 arc lights.

**Pasadena, Cal.**—The Electric Light & Supplies Committee of the City Council contemplate increasing the municipal electric lighting plant by the adding of 150 lamps, 50 to be arcs and 100 incandescents of 32 c.p.—C. C. Glass is Manager. Civil Engineer E. F. Scattergood estimates that the cost of changes in present system and installing a conduit system would be \$53,000.

**Montezuma, Col.**—The Montezuma Power & Light Company has been incorporated with a capital stock of \$50,000 by George L. Nye, B. B. Morrison and R. W. Wagner.

**Washington, D. C.**—The Potomac Electric Power Company has secured permit to erect

proposed substation at 1001 Harvard street, N. W., to cost about \$6,500.—F. B. Pyle, Architect, 1003 F street N. W.; Samuel Prescott Co., Contractors, 700 Thirteenth street N. W.

**Dotham, Ga.**—A. J. Smith is organizing a company to develop electric power; plans and estimates are being prepared.

**Lewiston, Ida.**—The Lewiston Gas Company contemplates installing two new retorts and extending the mains.

**Washington, Ind.**—Robert Ashe, of Richmond, engineer and contractor, estimated that it would cost \$50,000 to make needed repairs to the city electric light plant; Council was dissatisfied, and other expert engineers were summoned, among them W. G. Franz, of Cincinnati, O., who placed the cost at \$35,000; Council ordered a special election to be held October 2 on the Ashe proposition, which includes many extensive propositions.

**Leavenworth, Kan.**—Council has granted a franchise to the Leavenworth Light & Heating Company.

**Ellsworth, Me.**—The Monterey Hydro Electric Power Company has organized for the purpose of owning, operating and dealing in water rights, powers and privileges for various purposes, with \$5,000,000 capital stock.—Precey Langely, President; N. T. Whiting, Treasurer.

**Oxford, Md.**—The Oxford Ice and Electric Company, of which R. H. Pollock, of Baltimore, is President, has closed contracts with the officials of Oxford for 50 cluster shade lights of 100 candle power to be placed at the intersection of streets; in addition to this the company will supply 600 lights of 16 candle power for lighting stores and dwellings.

**Chelsea, Mass.**—The Board of Aldermen is favorably considering a petition of the Massachusetts Pipe Line asking for permission to run pipes in the streets of the city to East Boston to supply that locality with gas.

**Provincetown, Mass.**—The Cape Light, Heat & Power Company has applied to the Board of Gas and Electric Light Commissioners for permission to issue \$25,000 bonds, of which \$14,000 is for the payment of the cost of extending its service to North Truro, Truro, and South Truro.—T. W. Crosbie, Manager and Superintendent.

**Detroit, Mich.**—The Public Lighting Commission estimates that it will cost \$3,511 to establish for the Department of Parks and Boulevards 25 new lights on the boulevards at dangerous turns and intersections; Commissioner Breitmeyer has asked Council to consider the matter from the need of the city.

**Northfield, Minn.**—The citizens of Northfield will be given an opportunity to vote for the first time under the new charter, September 17, at a special election on the granting of a franchise for the Northfield Heat, Light & Power Co.; the company asks for a twenty-year contract.

**St. Louis, Mo.**—The Board of Public Improvements will add about 4,000 lights to the street lighting service.

**Beatrice, Neb.**—The new owners of the old gas plant are planning to make some extensive improvements; the old plant is to be remodeled and enlarged, the present system changed in many ways and considerable money expended; the new owners have filed articles of incorporation under the name of the City Light and Gas Company, capital stock \$90,000.—R. C. Barney, Allen Brownhall and Mark A. Noble, Incorporators.

**University Place, Neb.**—Bids will be received for engines, generators and switchboards for the proposed municipal electric plant; it will have a capacity of 3,500 16-c.p. incandescent lights, and estimated to cost \$18,000.—Baker & Early, Lincoln, Neb., Engineers.

**Camden, N. J.**—Council has authorized the issuance of bonds to cover the installation of a municipal lighting plant.

**Niagara Falls, N. Y.**—The Niagara Falls Lighting Company, organized by James E. Rock to enter the local electric lighting field, has filed an application with Council for permission to use poles, wires, conduits, etc., in Niagara Falls.

**High Point, N. C.**—The Carolina Valley Railway & Construction Company, Dee Allen, President, has purchased 300 acres of land on which to erect an electric power plant.

**Rutherfordton, N. C.**—An election will be held to decide the question of issuing bonds for an electric light plant.

**Bryan, O.**—The electric light plant company has decided to enlarge their plant.

**Toledo, O.**—Council Committee on Gas and Light has unanimously approved ordinance granting to the People's Heating & Lighting Company the right to use the streets of the city.

**Oklahoma City, Okla.**—The Oklahoma Fuel, Light, Heat & Power Company has been incorporated with a capital stock of \$500,000

by Jas. S. Cummings, J. R. Graf, of Chicago, and others.

**Texhoma, Okla.**—The Texhoma Electric Light, Water & Ice Company has been incorporated with a capital stock of \$15,000 by W. A. Turner, Wallace G. Hughes, I. H. Osborne and a number of others.

**Greenville, Pa.**—A special election will be held to vote on the proposition of issuing bonds for the city of Grove City to install an electric lighting plant.

**Reading, Pa.**—The Board of Park Commissioners contemplates lighting the City Park; the plan is to lay the electric cables in conduits under the ground and to suspend the lights from tall ornamental iron poles, such as are in use in public parks in larger cities; the Park Commissioners are not figuring on the cost of the contemplated improvement.

**Calvert, Tex.**—Jas. J. Henry, of Denver, Col., is promoter of a project to build a large power plant to furnish light and power to surrounding towns.

**Davenport, Wash.**—The Davenport Machinery Company, which furnished light and power, has been reorganized and will make extensive improvements.

**Milwaukee, Wis.**—R. W. Hunt & Co., of Chicago, Ill., are at work on completing detailed plans for proposed electric lighting plant.

## FIRE EQUIPMENT

**Hollywood, Cal.**—The citizens have voted \$15,000 bonds for fire protection; a gasoline engine will be purchased and fire system installed.

**Evansville, Ind.**—The Board of Public Safety has decided to build a hose house at First avenue and the Belt Railway.

**Kalamazoo, Mich.**—The Fire Board has accepted plans for building two fire stations.—J. Wesley Bean, Secretary.

**Duluth, Minn.**—Council is considering the erection of a new fire hall to be located at Fifth avenue and Seventh street.

**Camden, N. J.**—In consideration of franchise granted for permission to open up such streets and highways as may be necessary to construct its conduit system, the Delaware & Atlantic Telephone and Telegraph Company will lay conduits for the police and fire alarm system.

**Newark, N. J.**—The Board of Education has directed 75 feet of unlined fire hose to be placed in every school house in the city; bids will be received for the purchase of the hose.

**Guthrie, Okla.**—At an election \$6,000 bonds were voted for fire protection.

**Altoona, Pa.**—A brick engine house will shortly be erected.—G. A. McFalls, Acting Engineer.

**Philadelphia, Pa.**—A two-story fire house, 32x70 feet, will be built of brick and stone, with composition roof and thoroughly modern equipment, at Baltimore avenue, west of Springfield avenue, Clifton Heights, for the Clifton Heights Protective Association.

**Scranton, Pa.**—The citizens of South Scranton have petitioned for engine house and fire protection.

**Richmond, Tex.**—The fire company is being reorganized.—L. A. Preiuster, Foreman.

**Sturgeon's Bay, Wis.**—The City Clerk has been instructed to readvertise for bids for the purchase of a new chemical engine.—Address City Clerk.

## PUBLIC BUILDINGS

**South Pasadena, Cal.**—An election will be held to vote on the question of issuing \$20,000 school bonds.—Address City Clerk.

**Uplands, Cal.**—Bonds, \$30,000, have been voted for the erection of school house.—Address Clerk of the Board.

**Coeur D'Alene, Ida.**—The citizens have voted \$40,000 bonds for the erection of City Hall.—Address City Clerk.

**El Paso, Ill.**—Council has passed an ordinance authorizing an issue of \$6,000 bonds for building City Hall.—Address City Clerk.

**Paris, Ill.**—The citizens have voted \$60,000 bonds for the construction of high school.—Address Clerk of the Board.

**Claremont, I. T.**—An election will be held to vote on the question of issuing \$20,000 school bonds.—Address City Clerk.

**Chelsea, Mass.**—Mayor Willard has vetoed an order to expend \$18,000 for installing a new heating and ventilating apparatus in the Chelsea High School and to build boiler and coal house.

**Hillsdale, Mich.**—Bids will be received September 15, for the purchase of \$12,000 5-15-year school bonds.—Dr. Bion Whelan, Director.

**Ellendale, Minn.**—Bids will be received, September 25, for the purchase of \$1,400 5 per cent. school bonds.—J. J. Lee, Chairman.

**Lockport, N. Y.**—Council has voted \$12,000 bonds for the erection of a high school.—Address Clerk of the Board.

**Roanoke Rapids, N. C.**—Bids will be received, September 16, for the purchase of \$10,000 6 per cent. school bonds.—W. C. Edwards, Chairman.

**Minot, N. D.**—The citizens have voted \$27,000 bonds for the erection of school house.—Address Clerk of the Board.

**Beaver Dam, O.**—The question of issuing \$20,000 bonds for school purposes will be submitted to a vote of the people.—Address Clerk of the Board.

**Toledo, O.**—Bids for the \$480,000 school bonds were opened by the School Board and awarded as follows: \$50,000 to the Dime Savings Bank on its bid of 4 per cent.; \$215,000 to the Second National Bank at 3½ per cent., and \$215,000 to the Ohio Savings Bank and Trust Company at 3.26 per cent.

**Kayne, Pa.**—Bids will be received, October 1, for the purchase of \$20,000 4½ per cent. school bonds.—Robert Shantee, Treasurer.

**Huckabay, Tex.**—The Attorney General has approved an issue of \$3,000 school bonds.—Address Clerk of the Board.

**North Fort Worth, Tex.**—A City Hall is to be erected at North Fort Worth.

**Quanah, Tex.**—The Attorney General has approved an issue of \$20,000 5 per cent. school bonds.—Address Clerk of the Board.

**Sherman, Tex.**—The Attorney General has approved an issue of \$27,000 school bonds.—Address Clerk of the Board.

**Walla Walla, Wash.**—E. A. Rollin & Co. have purchased \$100,000 5 per cent. 20-year City Hall bonds.

## STREET RAILWAYS

**Fitzgerald, Ga.**—L. C. Hollendorff, of Valdosta, has been granted a street railway franchise and it is proposed to extend the line nine miles to Ocilla, Ga.

**Chicago, Ill.**—The Chicago & Interurban Railway Company has been incorporated with a capital stock of \$100,000 to construct a road from Chicago south through Harvey, South Holland, Calumet, Thornton, Chicago Heights, Crete, to Joliet, Blue Island, Riverdale, Dolton, Hammond and other towns.—J. W. McGill, John W. Humphrey, and others, Incorporators.

**Algiers, La.**—The Algiers Railway & Light Company will make additional extensions to road.—Lee Carroll, President.

**St. Joseph, Mo.**—The St. Joseph & Savannah Interurban line proposes to issue bonds for the construction of extensions.

**Cleveland, O.**—The Massillon, Wooster & Mansfield Traction Company has been incorporated with a capital stock of \$10,000 by William C. Rhoades, E. R. Lewis, J. H. Cousins and a number of others.

**Reading, Pa.**—As the result of a conference of President W. E. Harrington, of the Eastern Railways Company, with prominent business interests of the West End of the County, a change will be made in the proposed trolley extension to Tremont and Hegins; the Glen Carbon line will be extended from Minersville and will tap Tremont, Hegins, Millersville and Gordon.

**Titusville, Pa.**—The Titusville Electric Traction Company may build an extension to Oil City.—W. J. Smith, General Manager.

**Handley, Tex.**—Officials of the Northern Texas Traction Company state that the work of enlarging the big power house at Handley will in all probability begin not later than the first part of October; the company will spend \$150,000 in the installation of additional machinery and other improvements.

**Wheeling, W. Va.**—The Interurban Railway Company has been incorporated with a capital stock of \$10,000 for the purpose of building an electric railway from Wheeling to Bethany, W. Va.—W. D. Finson, J. D. Caldwell, J. H. Brennan, of Wheeling, and others, Incorporators.

**Eau Claire, Wis.**—The Chippewa Valley Railway, Light & Power Company will issue \$2,000,000 bonds for improvements.

## BRIDGES

**Oroville, Cal.**—The citizens of Butte County have voted bonds for the construction of bridges.—Address County Auditor.

**Washington, D. C.**—One of the American consular officers in Asia writes that bids have been advertised for in regard to the construction and erection, in every respect complete, of a steel cantilever and girder bridge to connect the city in question with one of its suburbs. He further states that a second larger bridge is to be erected later on, and if the first contract is well discharged, the firm doing the work will undoubtedly get the second undertaking; he also furnishes the American address at which specifications, drawings, form of tender, and all other information may be obtained; the total length between abutments is to be 1,102 feet, the central span of 420 feet to clear high water by 75 feet.—Address No. 1378, Bureau of Manufactures.



**Mullan, Ida.**—The Village Board is considering a petition for a bridge across the river at Third street.

**East St. Louis, Ill.**—The Chouteau avenue site for the proposed free bridge was the subject of a resolution introduced in Council; if the bridge is built on the site, the eastern approach will extend back to about Tenth street and make this street an important north and south thoroughfare.

**Harmon, Ill.**—The Township Commissioners will build several bridges in the near future.

**Sterling, Ill.**—The Board of Commissioners of Jordan Township have decided to erect a new bridge at the foot of the hill near the residence of Abram Griffin on the Pennington road to take the place of the bridge that was swept away by heavy rain; the old bridge was 26 feet long and 20 feet wide; the Whiteside County Commissioners will pay one-half of the cost.

**Elkhart, Ind.**—The County Commissioners will ask Council to appropriate \$25,000 for new bridges and \$8,000 for bridge repairs.—Joseph Cannon, Commissioner.

**Ft. Wayne, Ind.**—The County Commissioners have received a petition for the construction of a county line bridge across St. Mary's river on the line between Adams and Allen counties; the Commissioners will in all probability favor the petition and turn the appropriation resolution over to the County Council for approval.

**Rockport, Ind.**—The engineers surveying for the proposed bridge over the Ohio river to connect this city and Owensboro, Ky., ten miles below the city, have completed their work.

**Duluth, Minn.**—Council has under consideration the reconstruction of bridges across the Lester river and the Miller creek, and two or three bridges in West Duluth.

**Cincinnati, O.**—A new ordinance for a steel viaduct 40 feet wide over the Baltimore & Ohio Southwestern tracks, at Hopple street, is being prepared by which the street will be 26 feet over the tracks; the total estimated cost is \$448,539.45; the structure is to cost \$359,539.45, and the railroad agrees to pay \$119,846.48 and the city the rest; this will pay \$39,000 of the estimated \$89,000 expense for property required.

**Dayton, O.**—City Engineer Kling is preparing plans for bridge across Wolf creek, estimated to cost \$5,000.

**Springfield, O.**—A petition of the 1,500 citizens asking for a viaduct over Spring street when the new Big Four improvements are made has been presented to Council.

**Guthrie, Okla.**—Bonds, \$7,000, have been voted for building a steel and concrete bridge at Fifth street; Council has been petitioned for \$200 to aid in building bridge at Pleasant Valley.

**Reading, Pa.**—Council has directed the City Engineer and Board of Public Works to advertise for bids for the construction of the Spring street subway.

**Washington, Pa.**—The Grand Jury has approved of the rebuilding of a bridge over Racoon creek in Smith Township, near Cherry Valley, to be of steel and concrete; it will be 75 feet long and 16 feet wide.

**Greenville, S. C.**—The Greenville & Knoxville Railroad will construct two steel bridges, two steel viaducts and four short tunnels on its line between Greenville and Hendersonville, N. C.—J. N. Johnston, Chief Engineer, Marietta, S. C.

**Austin, Tex.**—An engineer has been engaged to estimate cost and report upon advisability of constructing new bridge across the Colorado river, to be built of either concrete or stone and cost about \$500,000; it is proposed that cost be shared by city, Travis county, and either the interurban or local electric railway company.

## MISCELLANEOUS

**Los Angeles, Cal.**—Bids have been advertised for to furnish two auto patrol wagons for the Police and Fire Departments.

**Washington, D. C.**—There will soon be needed by the Isthmian Canal Commission a quantity of supplies for the establishment of four automatic fire alarm telegraph systems complete for the towns of Ancon, Culebra, Empire, and Gorgona; bids will be asked for furnishing 10,000 feet of double braided, dampproof copper office wire, 20 miles of double braided, hard drawn copper wire, 250 four-pin creosoted, standard cross-arms, 150 two-pin creosoted standard cross-arm pins, 1,000 locust cross-arm pins, 500 locust pole brackets, and 1,100 triple petticoat glass insulators.

**Pavo, Ga.**—The citizens have voted to issue \$12,000 municipal bonds to be applied to the erection of a school house, drilling an artesian well and putting in a system of water works.

**Huntington, Ind.**—Council has unanimously passed an ordinance granting the Huntington Light & Fuel Company the right to extend

their steam and water heating lines in the business section of the city.

**Cambridge, O.**—Health Officer Dr. W. T. Ramsay estimates that a garbage disposal plant could be built for \$15,000; Council will take up the matter.

**London, O.**—Bids will be received, September 16, for the purchase of \$29,400 Madison County bonds.—J. J. Shaffer, County Clerk.

**Marion, O.**—The petition to pave Mill street from Oak to State street and for the construction of a storm water sewer on Grand avenue has been referred to the Street Committee.

**Reading, O.**—Bids will be received, September 19, for the purchase of \$8,200 5 per cent. 20-year improvement bonds.—J. R. Veder, Village Clerk.

**Sidney, O.**—The improvement of South Main avenue by paving, gutters and the necessary sewers has been authorized; the improvement will be advertised as soon as plans are prepared.

**Wooster, O.**—Proposals will be received by the City Auditor, September 21, for the purchase of \$16,000 32 bonds, with interest at 4 per cent. per annum, payable semi-annually.

**Guthrie, Okla.**—At recent election the proposition to issue \$30,000 improvement bonds carried.—Address City Clerk.

**Portland, Ore.**—Council has revoked the steam heating franchise granted the Portland Railway Light and Power Company; this is the first of the grants to be rescinded by the Council; two others are under consideration.

**Altoona, Pa.**—Council has passed resolutions providing for paving, curbing and laying sewers and water mains on a number of streets.

**Scranton, Pa.**—Council has instructed the Director of Public Works to furnish an estimate of the cost of constructing and maintaining an artificial lake and bath house at Nay Aug Park.

**Nashville, Tenn.**—An election will be held, September 12, to vote on the question of issuing \$30,000 4½ per cent. 30-year bonds; an election will be held October 10 to decide the question of issuing \$200,000 water works extension bonds.—Address City Clerk.

**Smyrna, Turkey.**—The Municipality inquires for bids on signs for marking street corners.—Address No. 1390, Bureau of Manufactures, Washington, D. C.

**Salt Lake City, Utah.**—Council has unanimously passed an ordinance creating parking district No. 1; this gives over to the control of the Park Commission Brigham, First South, Second South, Third South, Sixth East, First avenue and Second avenue.

**Salem, Va.**—Bids will be received, September 16, for the purchase of \$25,000 light and water bonds.—W. R. Hester, Clerk of Finance Commission.

**Spokane, Wash.**—City Council has voted \$100,000 to the Park Commission; Aubrey L. White, President, says that \$75,000 will be used in street grading and water extension of the local parks, and three new park sites will be acquired with \$25,000.—Aubrey L. White, President, Park Commission.

**Grafton, W. Va.**—Chas. Stolzenfels has made a proposition to erect a crematory for the destruction of garbage on which he proposed to charge \$600 per year.—Dr. T. F. Lanham, City Health Officer.

## BIDS RECEIVED

**Birmingham, Ala.**—John Bigler has been awarded contract to lay sidewalks on four streets, at 92 cents per square yard, pavement to be 5 inches deep, including an inch crust.

**Mobile, Ala.**—Brandon & Son have been awarded contract to lay 724.4 square yards of sidewalks on Dauphin street, at \$1.29 per square yard, and 629.7 square yards on Government street, Emanuel, Conti and South Conception street, at \$1.18, and Koolman & Co., 749.8 square yards on St. Francis, North Joachim and North Jackson street, at \$1.25 per square yard.

**Arkadelphia, Ark.**—Rolinson Brothers, of Pine Bluff, have been awarded contract for constructing sewers, for \$28,362, as follows: 19,735 ft. 6-in. vit. pipe, 4 to 8 ft., clay and sand excavation, 30 to 90 cents; 19,085 ft. 8-in., 63 cents; 5,760 ft. 10-in., \$1.55; 500 ft. 12-in., \$1.50; manholes, \$98; per foot for brick work, \$3.50; sheathing left in trench, \$20 per M.; flush tanks, including flushing appliance, \$55; wages of common labor, \$1.50 per day; other bidders were: G. Morner, Little Rock, \$34,246; Mik. Peary, Little Rock, \$30,266; J. O. Eevern, Guthrie, Okla., \$35,000; H. C. Gass, Belleville, Ill., \$31,713; F. M. Berner, Marion, Ind., \$31,500; Municipal Engineering Company, Kansas City, \$33,500.—Theo. Hartman, Little Rock, Consulting Engineer.

**Paragould, Ark.**—Sewer Commissioners have awarded the work of constructing a

sewerage system to the W. K. Palmer Company, of Kansas City, Mo., who were the lowest bidders; they simply do the engineering and supervise the work, for which they are to receive 4½ per cent. of the cost of the system; bonds will be issued as soon as an estimate of the cost is made by the engineers; the system will cost approximately \$40,000.

**Los Angeles, Cal.**—Contracts have been awarded by the Board of Public Works, as follows: To improve Harvard boulevard, from Eleventh street to San Marino street, J. Hein, at \$2 per lineal foot for grading and graveling; 32 cents per lineal foot for cement curb; 16 cents per square foot for gutters; 12 cents per square foot for sidewalk; \$1,700 for culverts, complete. To pave Twelfth street, from Main street to Figueroa street, Western Paving Company, at 20.4 cents per square foot for paving; 34 cents per lineal foot for cement curb; 31.9 cents per square foot for gutters; 14 cents per square foot for sidewalk. To improve Occidental boulevard, from Temple street to Bellevue avenue, A. H. Calkins & Co., at \$3.50 per lineal foot for grading and graveling; 36 cents per lineal foot for cement curb; \$1 per lineal foot for crosswalks; 13½ cents per square foot for sidewalk; 18 cents per square foot for cement gutter; 12 cents per square foot for cobble gutter. To improve Bunker Hill avenue, from Bartlett street to Sunset boulevard, A. H. Calkins & Co., at 47 cents per lineal foot for cement curb; 11 cents per square foot for cobble gutter. To improve Marmon way, from Arroyo Seco avenue to Dayton avenue, awarded to J. Hein, at \$1.25 per lineal foot for grading and graveling; 32 cents per lineal foot for cement curb; 12 cents per square foot for sidewalk; 14 cents per square foot for cobble gutter; also Avenue 29, from Pasadena avenue to Barranca street, at \$1.10 per lineal foot for grading and graveling; 32 cents per lineal foot for cement curb; \$1.35 per lineal foot for crosswalks; 12 cents per square foot for sidewalk; 14 cents per square foot for cobble gutter. To improve Avenue 34, from Pasadena avenue to a point 711 feet westerly, B. B. Leshner, at \$1.45 per lineal foot for grading and graveling; 33 cents per lineal foot for cement curb; \$1.35 per lineal foot for crosswalks; 11 cents per square foot for sidewalk; 12½ cents per square foot for cobble gutter.

**Denver, Col.**—C. G. Shelley, Denver, has been awarded contract to erect Sedgwick County pile bridge, 1,200 feet, at \$5.89 per lineal foot; Morgan and Washington County pile bridge, 900 feet, \$5.54 per lineal foot; Spring Gulch concrete bridge, girder type, \$1,347.75; there were five other bidders; Sheeley was also awarded contract for Wolhurst concrete bridge, 25-foot span, girder type, for \$993; he bid \$1,487 on the arch type.

Bids on other bridges were received as follows: Cheyenne County bridge, at Kit Carson, pile bridge 346 feet long with approaches; Geo. Clossen, \$9.50 per ft.; Debeer Bridge Company, \$6.12; C. G. Sheeley, \$6.47; Midland Bridge Company, \$2,850.

Prowers and Baca Counties bridges—Prowers County bridge, 184 lineal feet; Denver Bridge Company, \$1,478; C. G. Sheeley, \$8.74 per ft.; Pueblo Bridge Company, \$1,380; Canton Bridge Company, Canton, O., \$1,352; L. H. Manville, Lamar, Col., \$14 per ft. Baca County bridge, 69 lineal feet; Denver Bridge Company, \$1,250; C. G. Sheeley, \$12 per ft.; Pueblo Bridge Company, \$759; Canton Bridge Company, Canton, O., \$625; L. H. Manville, Lamar, Col., \$15 per ft.—G. N. Houston, Deputy State Engineer.

**Bridgeport, Conn.**—Sullivan & Godfrey will lay Wyckoff blocks in Fairfield avenue, at \$3 per square yard, instead of Carbolium blocks, for which the city first contracted to pay \$3.11 per square yard.

**New Britain, Conn.**—Warren Brothers, Boston, Mass., have been awarded contract to pave Church street, from Main to Elm street, with bitulithic on a concrete base, about 3,600 square yards.—F. H. Oldershaw, City Engineer.

**Jacksonville, Fla.**—The Board of Public Works has awarded the contract for laying 6,060 square yards paving on Adams street, with Augusta brick, to the Georgia Engineering Company, of Augusta, Ga., at their bid of \$1.69 a square yard. The work includes grading an area approximately 6,060 square yards, and for furnishing and placing in position approximately 2,576 lineal feet of stone curbing and 10 circular corner stones of a radius of 6 feet, and for furnishing on the street and for laying 6,060 square yards, more or less, of vitrified brick or blocks.—Philip Prolean, City Engineer.

**Pensacola, Fla.**—For paving 170,300 square yards the Southern Bitulithic Company, Nashville, Tenn., bid \$2.65 for 2-inch bitulithic on 5-inch concrete, and \$2.55 for 1½-inch asphalt on 5-inch concrete and 1¼-inch binder; the Southern Brick Paving Company, Chattanooga, Tenn., bid \$2.61 for brick on 4-

inch concrete foundation and 1-inch binder; \$2.21 for brick on 8-inch sand base; \$2.49 for 1½-inch asphalt on 5-inch concrete and 1½-inch binder; \$2.27 for same with paint coat, instead of binder; Graves & Matthews, \$2.61 for brick on 4-inch concrete and 1-inch cushion and \$2.01 for brick on 8-inch sand base. The Southern Bitulithic Company bid 49 cents for laying 115,950 feet of concrete curb 6"x16" deep; the Southern Brick Paving Company, 42 cents; and Graves & Matthews, 48 cents; no contracts were awarded; bids will be readvertised.—T. Chalkley Hatton, Chief Engineer.

**Pekin, Ill.**—E. R. Harding and Mayor Schnellbacher have signed contract for the construction of the Fourth District sewer, for which Contractor Harding bid \$113,077.40; work will begin September 20, and be completed by December 1, 1908.

**Elkhart, Ind.**—W. W. Hatch & Sons Company, of Goshen, have been awarded contract for laying macadam pavements on various streets; the material to be used is crushed stone, gravel, screenings, or sand and asphaltic oil.

**Evansville, Ind.**—The Board of Public Works has awarded contract for the construction of the Kentucky avenue sewer to Hollerbach & May, at their bid of \$168,928.

**Fort Harrison, Ind.**—The bid of C. C. King Bro. & Son Co., of Indianapolis, Ind., \$1,945.23 in amount, has been accepted for the construction of water trough.

**Indianapolis, Ind.**—Bids have been received by the Board of Works, as follows: For construction of concrete retaining wall along west bank of White river, south of Washington street: George W. Fife, \$2,000; Hillis F. Hackedorn & Co., \$2,150; American Construction Company, \$2,150.

For the improvement of Thirtieth street, from Meridian to Senate avenue, with bitulithic roadway: Hoosier Construction Company, \$2.93 per linear foot east side; water connections, 75 cents per linear foot; gas connections, 50 cents per linear foot; sewer connections, 51 cents per linear foot. Union Asphalt Construction Company, \$2.82 per linear foot each side; water connections, \$1.25 per linear foot; gas, \$5 each; sewer, \$1 per linear foot. The Western Construction Company, \$3.09 per linear foot each side.

For the improvement of Thirtieth street, from Senate avenue north to Northwestern avenue, with bitulithic roadway: Union Asphalt Construction Company, \$3.53 per linear foot, each side; water, \$1.25 per linear foot; sewer, \$1 per linear foot; gas, \$5 each. Hoosier Construction Company, \$3.61 per linear foot, each side; water connections, 75 cents per linear foot; gas connections, 50 cents per linear foot; sewer connections, \$1 per linear foot. The Western Construction Company, \$3.80 per linear foot, each side.

For improvement of first alley west of College avenue, from Twenty-fifth to Twenty-seventh street, with brick roadway: The Indianapolis Construction Company, \$1.90 per linear foot, each side; gas connections, \$5 each; J. W. Abbott, rolled stone base, \$1.90 per linear foot, east side; J. W. Abbott, gravel concrete base, \$2.19 per linear foot, east side; George W. McCray, rolled stone base, \$2 per linear foot, east side; George W. McCray, gravel concrete base, \$2.20 per linear foot, east side.

For the improvement of Twenty-third street, from Rural to Roosevelt avenue, with cement walks: J. D. Hoss, 71 cents per linear foot; F. M. Lackey, 73 cents per linear foot.

For the construction of local sewer in Central avenue, from center of Thirty-fourth street to center of Highland drive: Sheehan Construction Company, \$1.49 per linear foot; Pease & Buzatt, \$1.51 per linear foot; William Yates & Co., \$1.54 per linear foot; Aetna Construction Company, \$1.56 per linear foot.

For the improvement of Sixteenth street, from Milburn street to Rembrandt street, with cement walks and curb: Stephen Wright, \$1.45 per linear foot; Marion Caldwell, \$1.53 per linear foot; the Indianapolis Construction Company, \$1.53 per linear foot; J. D. Hoss, \$1.69 per linear foot; C. G. Walter, \$1.75 per linear foot.

**La Grange, Ind.**—A. L. Bender, of Topeka, has been awarded contract for 4,000 square feet of sidewalks, including 6-inch excavation for walks; 2-inch gravel tamped for foundation; 4-inch cement; 3-inch cement and gravel 1:5; 1-inch top cement sand 1:5—Burnell & Smith, La Grange, bid \$1.35 per square yard and E. E. Joslin, Rome City, \$1.08 per square yard.—V. D. Weaver, City Auditor.

**Frankfort, Ky.**—The Russel-Irwin Company, New Britain, Conn., has been awarded contract for hardware furnishings for the new capitol building, for \$7,693.

**Louisville, Ky.**—The National Concrete Construction Company was low bidder for building a retaining wall at the cutoff, at \$5,610.65; Henry Bickel bid \$5,950.65.

**Louisville, Ky.**—There were five bidders, three Louisville and two foreign firms, for the construction of the Happy Hollow concrete sewer, not to cost over \$25,000 or \$30,000. The Louisville bidders are Charles F. Fitch & Co., the Kentucky Construction Company and R. L. Clark & Co., the latter being low; the other bidders are Paul & Kershner, of Dayton, O., and Frank W. Folz & Co., of Cincinnati, O.

**Springfield, Mass.**—Following is the list of bids for Abbe avenue bridge, opened Tuesday, September 3: Boston Bridge Company, Boston, Mass., \$14,999; H. P. Converse & Co., Boston, Mass., \$19,376; R. F. Hawkins Iron Works, Springfield, Mass., \$19,450; United Construction Company, Albany, N. Y., \$17,832; New Jersey & West Virginia Bridge Company, Manassquam, N. J., \$15,630; H. L. Norton, Boston, Mass., \$15,449; Berlin Construction Company, Berlin, Conn., \$16,582; Canton Bridge Company, Albany, N. Y., \$17,740; Penn Bridge Company, Philadelphia, Pa., \$16,945.—Chas. M. Slocum, City Engineer.

**Montgomery, Minn.**—The New Prague Foundry, of New Prague, has been awarded contract for earth work, and furnishing and laying 524 feet 6-inch water pipe in 7½-foot trench, at \$909.—A. S. Olson, City Recorder.

**St. Paul, Minn.**—Bids for boulevarding Daly street, from James to Jefferson streets, have been advertised for; the macadamizing will be a basis of limestone with an inch of fine crushed granite on top; Kettle river sandstone will be used for the curbing and the best of sod will be laid between the curb and the walk.

**Grand Island, Neb.**—E. C. McCashland has been awarded contract to furnish 53¼ short tons 8-inch cast-iron pipe, and to lay same, make all connections, etc., for \$3,225.—H. E. Clifford, City Clerk.

**Camden, N. J.**—The Street Committee has awarded contract for paving to the Filbert Construction Company, of Philadelphia, Pa., for \$1.91 per square yard.

**North Bergen, N. J.**—The contract for the erection of a bell tower has been awarded to the Hudson Iron Works; the contract had been previously awarded, but cancelled because no start was made to do the work.

**West Hoboken, N. J.**—Three bids have been received for supplying a one-horse hose wagon for Eagle Engine Company: W. B. Bindewall, \$750; A. F. & S. C. Stewart, \$598; Combination Ladder Company, \$525.

**Fort Bayard, N. M.**—The contract for the extension of water system has been awarded to J. A. Harlan, of Fort Bayard, at \$1,590.

**Jamestown, N. Y.**—All bids were rejected for constructing 22,873 linear feet cement curb and gutter; John E. Shoos, of Gowanda, was low bidder, at \$18,461.43; John R. Steele, Jr., of Brooklyn, bid \$20,944.68; S. P. Hull, Cortland, \$25,603.40, and H. W. Walker, Jamestown, \$21,494.05.—C. B. Jones, City Clerk.

**Carrollton, O.**—Freshwater Bros. & Co., of Chester, W. Va., have the contract for paving, at \$18,690; their bid was \$1.50 per square yard for paving and 50 cents per foot for straight curb.

**Celina, O.**—Karch and Vining have the contract for paving Market street, at Rockford, at \$18,430.

**Cincinnati, O.**—The County Commissioners have awarded the contract for repairs of culverts in Whisky Run road to F. Praechter, for \$1,945.50.

The city's portion of the cost of paving Highland avenue is \$17,000, and the contract has been awarded to James Agness, at \$21,722.

**Columbus, O.**—The contract for paving Mound street has been awarded to D. E. Sullivan & Sons, at \$43,512.

**Galion, O.**—The Commissioners have awarded to Contractor MacGlehill the contract for building the Climax pike and for the superstructure of the Westfield bridge; the paving contract is for six miles of road, and the price is \$18,000.

**Lorain, O.**—H. W. Matthews was low bidder on macadamizing Eleven avenue, at \$19,780; he was also low on Vive street, but the contract for that job was not awarded.

**Martin's Ferry, O.**—Dixon and Pickett were low bidders on paving Dillionvale avenue, at \$14,236.

**Marysville, O.**—Council has awarded the contract for paving Plum street to Welsh & Jones, at \$12,392.60.

**Middleton, O.**—The Board of Public Service awarded the contract for constructing sewers on Mulberry alley and South Broadway to John Arrp, Jr., at \$1,588.25. F. M. Kemp & Sons are low bidders for curbing and paving with vitrified brick Sorg and Third streets; their bid on Third street covers 1,876 square yards of brick and 110 feet of curbing, and on Sorg street 5,000 square yards of brick, 250 feet of redressing curbing and 870 feet of new curbing.

**Pomeroy, O.**—John Bauer has the contract for paving; he will use Logan block, and will begin work at once on a mile and a quarter of paving.

**Portsmouth, O.**—The contract for constructing the branch sanitary sewer to the Drew factory through Eighth street, from Damarin alley to Raynor alley, has been awarded to Grimes and Kellhofer.

**Richwood, O.**—The contract for the paving of Plum street, from Fourth to Eighth, has been awarded to Messrs. Welch and Jones.

**Sandusky, O.**—The Board of Public Service awarded the following contracts: M. J. Callan, sewerage North Depot street, at \$4,285; the Pierce street sewer contract to Henry Brothers, at \$6,003.50; M. J. Callan, for Franklin street, at his bid of \$1,739.79.

**Zanesville, O.**—J. E. Brown was awarded the contract for paving of Bernard alley, at his bid of \$846.56. The U. S. Cast Iron Pipe and Foundry Company has been awarded contract to furnish 12 tons of 4-inch pipe, at \$37.10, and 12 tons 4-inch pipe, at \$36.10; all laying is done by the Department; the Columbia Machine Company has contract for fire hydrants, at \$36 each.—P. J. Kirwin, Secretary, Board of Public Service.

**Allentown, Pa.**—The Ambler-Davis Company, of Philadelphia, was awarded contract for the new State road extending on Liberty street to Cetronia, by State Highway Commissioner Joseph Hunter. The bids are as follows: J. F. Frazier Company, Philadelphia, trap rock, \$17,113.57; A. H. Leader, Reading, limestone, with cast-iron piping, \$10,368.97, with corrugated steel piping, \$9,977.17; George H. Hardner, Allentown, trap rock, \$11,300.21; Ambler-Davis Company, Philadelphia, limestone, \$8,996.90; trap rock, \$10,146.90; Weaver Construction Company, Allentown, limestone, \$11,981.52; trap rock, \$13,131.52; Horn and Neff, Slatington, limestone, with cast-iron piping, \$13,807.30; with corrugated steel piping, \$13,095.30; W. C. Watson, Germantown, limestone, \$13,652.80; F. W. Borneman, of Lansdowne, entered a series of bids, as follows: \$12,374.60, \$12,011, \$10,994.60, \$10,631.

**Harrisburg, Pa.**—Six bids, four of them from local firms, were opened, August 19, by the Sanitary Committee for the disposal of the city's garbage; all of the bids were based on a ten-year contract, and the bids ranged from \$37,500 to \$26,500, the lowest bid, which came from the Pennsylvania Ammonia and Fertilizing Works, which has a fertilizing plant in the Tenth Ward, and whose representative is Alexander W. Carlisle. This company proposes installing a reduction plant similar to the one that has been in use in Cleveland, O., since 1898. This plant is designed by C. O. Bartlett & Snow Company; the committee agreed to visit this plant before recommending to Councils that the Pennsylvania Ammonia and Fertilizing Company be awarded the contract; other bidders and their figures follow: Charles C. Fisher, York, reduction, \$27,000; United Ice and Coal Company, Harrisburg, reduction, January 1, 1908, to January 1, 1913, \$33,000; January 1, 1913, to January 1, 1918, \$35,000; United Ice and Coal Company, Harrisburg, incinerating, January 1, 1908, to January 1, 1913, \$34,000; January 1, 1913, to January 1, 1918, \$36,000; Davis Garbage Company, Lancaster, incineration, \$37,500; Harrisburg Reduction Company, reduction, \$37,000.

**Hazleton, Pa.**—Lewis Lutz has been awarded contract to erect park pavilion, for \$3,600; James W. Boyle bid \$3,664; and James Griffith \$3,830.

**Johnstown, Pa.**—The Tennis Brothers Company, of Pittsburg, has been awarded contract for complete electrical construction and equipment, including power house, cars and electrical machinery, for Southern Cambria Railroad.

**Oakmont, Pa.**—The Sawdors Paving and Contracting Company has been awarded contract for paving 9,600 square yards brick on 9-inch slag foundation and ½-inch sand filter at \$1.38 per square yard; also 5,000 yards clay excavation, Oakmont avenue, at 48 cents, and setting 4,300 feet concrete curb and gutter at 83 cents; concrete gutter 2-inch wide and 10-inch thick; curb 16 inches deep on 6-inch slag foundation; H. S. Mitchell has contract for 11,000 yards clay excavation in Ninth and Tenth Districts, at 37 cents.—Douglass & McKnight, Borough Engineers.

**Brownsville, Tex.**—The contract to build the water works and electric light plant was let to H. Cullen, Jr., of the American Light & Water Company, of Kansas City, Mo., whose bid was the lowest out of five bids that were submitted, at \$65,940; it is expected that the work will be completed in about eight months.

**Fort Worth, Tex.**—The City Commission has accepted the bid of Flint & Caluker for the construction of a vault in the City Tax Collector's office, at \$1,036.



## PATENT CLAIMS

863,360. Sewage-Ejecting System. John W. Cooney, New York, N. Y. Serial No. 340,968.

A system for transferring liquids comprising a tank arranged to receive the liquid and provided with a suitable outlet, a float arranged to rise and fall with the liquid in the tank, a ventway affording communication between the tank and the outer air, a source of compressed gas in communication with the tank, a vertically-movable piston valve in control of both such communications, a valve rod connected with the valve and entering the top of the tank, connections between the valve rod and the float whereby the rod and valve are raised and lowered by the movements of the float, and spring-actuated valve-shifting mechanism connected with the valve rod and operating to open and close the valve quickly during the latter portions of the vertical movements of the valve rod.

863,585. Drop-Body Vehicle. Aaron P. Bowman, Pontiac, Mich. Filed Sept. 22, 1906. Serial No. 335,747.

The combination with the circle plate or fifth wheel, the axle, and an interposed spring, of a pair of separated brace bars pivotally connected at one end to said axle and connections between their opposite ends and said circle.

863,597. Smoke-Consuming Boiler-Furnace. Henry H. Freeman, Wilkesburg, Pa. Filed October 11, 1906. Serial No. 338,493.

In a furnace, the combination of a heat absorbing element, a fuel combustion chamber in front of said heat absorbing element, a wall separating the heat absorbing element and fuel combustion chamber and providing a supplemental combustion chamber and having a series of openings provided with conical nozzles projecting into the supplemental combustion chamber, a second wall in front of the first wall providing an air chamber between said walls and having a series of straight nozzles open to the fuel combustion chamber and projecting into the conical nozzles of the first wall, and a connection from said air chamber to the atmosphere.

863,602. Air-Supplying and Pressure-Regulating Means for Air and Gas Mixing Apparatus. Edwin A. Hall, Hyde Park, Mass., assignor to Airified Gas Heating and Power Company, Boston, Mass., a Corporation of Arizona. Filed May 15, 1906. Serial No. 316,963.

An apparatus of the character stated, comprising two alternately acting air pumps, a pressure equalizer, connections between said pumps and the equalizer through which the equalizer removes air from the pumps, a conduit through which air passes from the equalizer, and a pressure regulator including a valve casing forming a part of said conduit, a valve in said casing, a sealing tank, and an air bell movable in the tank and means controlled by the pressure in the portion of the conduit at the outlet side of the valve casing for determining the position of the valve.

863,614. Apparatus for Driving Piles Under Water. Simon Lake, Berlin, Germany. Filed March 22, 1907. Serial No. 363,944.

A device of the kind described, comprising a guide tube, a housing detachably connected thereto, a drop hammer supported within the housing and operable within the tube, and means for controlling the movement of the hammer.

863,646. Hydrocarbon Rock-Drill. John V. Rice, Jr., Edgewater Park, N. J., assignor of one-eighth to Albert Edward Tower, Poughkeepsie, N. Y., and seven-eighths to Fred E. Tasker, New York, N. Y. Filed April 16, 1903. Serial No. 152,964. Renewed June 4, 1907. Serial No. 377,263.

In a rock drill, the combination of a cylinder, a piston therein, a piston rod having a movement with the piston and a secondary movement inside of the piston, means carried by the piston for imparting a rotation to the rod, and elastic means connecting the piston and piston rod, consisting of a yielding rolling device on one element engaging a curved face of the other.

863,666. Fluid-Distributing Apparatus. Edward J. St. Croix, Seattle, Wash. Filed April 19, 1906. Serial No. 312,702.

In a fluid distributing apparatus, a feed pipe for conveying water from a source of supply, a plurality of distributing pipes connected with said feed pipe, means for directing water from the feed pipe to either one of said distributing pipes, fluid operated means connected with one of said last pipes for intake and with another one thereof for discharge, a receptacle connected with one of said distributing pipes, for receiving water therefrom, means for controlling the flow from said last pipe to the receptacle, and means for transmitting water from said receptacle to the distributing pipe that re-

ceives the discharge from said fluid operated means.

863,687. Detachable Arm for Voting-Machines. Charles C. Abbott, Pittsfield, Mass., assignor to Triumph Voting Machine Company, Pittsfield, Mass., a Corporation of New Jersey. Filed January 14, 1907. Serial No. 352,078.

The combination with a shaft having a cut-away portion, of a U-shaped arm having openings in the branches to receive the shaft and locking ears, and a wedge lying between the bow of the arm and the recess in the shaft and locked in place by bending the ears about it.

863,692. System of Electrical Distribution. William L. Bliss, New York, N. Y. Filed July 20, 1904. Serial No. 217,385.

In combination, a generator, a supply circuit connected therewith, a battery circuit containing a storage battery and a translating circuit containing translating devices connected with said supply circuit, a regulator adapted to regulate said generator and having electromagnetic windings controlling the operation thereof, one of said windings being connected in said supply circuit and the other in said translating circuit, and means for rendering said regulator inoperative whenever said generator and said storage battery conjointly furnish the current to operate said translating devices.

863,703. Dumping-Car. Harry W. Dougherty, Leechburg, Pa. Filed April 17, 1907. Serial No. 368,702.

In a dumping car, the combination with a car body provided with a discharge opening in its bottom, and a door mounted to swing into open and closed positions relatively to said opening, of a pair of counterweights operatively connected to the said door, and vertical casings arranged on the car body and serving to close and guide the counterweights.

863,706. Rotary Pump. Carl Enke, Schkeuditz, Germany. Filed November 1, 1906. Serial No. 341,626.

A multiple step rotary pump comprising a casing, a series of annular elements closely fitting together and mounted therein and longitudinal ribs between said elements and casing for preventing contact of adjacent surfaces of said elements and the pump casing except at a small number of points for the purpose set forth.

863,745. Hose-Pipe-Coupling End. Edward D. Nelson and William L. Brown, Altoona, Pa. Filed February 20, 1906. Serial No. 302,014.

A hose pipe having an essentially non-metallic body and enlarged end head and having a non-metallic internally exposed portion throughout its length, in combination with a coupling socket adapted to receive and inclose said enlarged end head and provided with means at its outer end which abut against the inner edge of said head.

863,757. Concrete-Block Mold. Ernest O. Ricks, Birmingham, Ala. Filed August 28, 1906. Serial No. 332,370.

A mold box adapted to be placed on a pallet and comprising end pieces, sides having portions which extend beyond each end, two pairs of swiveling links directly connecting said sides to each end, one pair only of links at each end being connected to an actuator whereby they are moved to open or close the box.

863,775. Concrete-Mixer. Frank W. Blakeslee, Ashtabula, Ohio. Filed December 22, 1904. Serial No. 237,992.

A concrete mixer comprising a rotatably mounted cylindrical casing having two series of alternately arranged baffle plates disposed upon the inner peripheral surface of the casing, the plates of one series extending from the ends of the casing in an oblique direction, but terminating at a point a short distance from an approximately central line upon the inner peripheral surface of the casing and in the direction of its longitudinal dimension and the plates of the other series comprising angularly disposed wings, the angle formed by the said wings being located upon an approximately central line following the direction of the longitudinal dimension of the peripheral surface of the casing and the said wings extending therefrom obliquely toward but stopping short of the ends of the said casing.

863,783. Portable Gas-Tank. Albert F. Chace, Boston, Mass., assignor to Emma L. Chace, Boston, Mass. Filed October 8, 1906. Serial No. 337,925.

A portable gas tank provided with suitable pipe couplings and with a liquid-holding filler and an internal supporting skeleton supported by the tank, and engaging the filler.

863,795. Hydraulic-Nozzle Support. George J. Henry, Jr., San Francisco, Cal., assignor of one-half to The Pelton Water Wheel Company, San Francisco, Cal., a Corporation of California. Filed June 3, 1903. Serial No. 159,940.

The combination with a main supply pipe,

of a discharge nozzle movably connected thereto, a strut attached to the outer end of the movable nozzle, a fixed support for the opposite end of the strut, and a hinge between the fixed support and the strut, the bearing of the hinged connection for the strut being in line with the axis of the nozzle's joint.

863,799. Electric Meter. Charles E. Holmes, Lynn, Mass., assignor to General Electric Company, a Corporation of New York. Filed November 23, 1904. Serial No. 233,942.

An electric meter having a casing, an operating mechanism, means for detachably supporting the entire operating mechanism within the casing, and a yielding member which when depressed permits of removing the entire operating mechanism from the casing.

863,817. Gas-Producing Apparatus. James N. Whitman, Philadelphia, Pa. Filed September 1, 1906. Serial No. 332,897.

A gas producing apparatus comprising a combustion chamber, mechanism for feeding solid fuel into the combustion chamber, and mechanism whereby the pressure of the gas produced controls the rate of feeding fuel.

863,828. Apparatus for Lighting or Extinguishing a Number of Lamps. John Anderson and John H. Bennet, Edinburgh, Scotland. Filed November 6, 1905. Serial No. 286,096.

A device for automatically lighting and extinguishing street and other gas lamps having in combination a liquid sealed gas bell, gas inlet to said bell, a plurality of gas outlets to said bell, a through ported step-by-step valve placed within the bell and controlling all said outlets, a pivoted link depending centrally within the bell and acting directly upon the step-by-step valve.

863,833. Crushing-Machine. Morton G. Bunell, Chicago, Ill., assignor to The Western Wheeled Scraper Company, Aurora, Ill., a Corporation. Filed May 4, 1903. Serial No. 155,689.

A crushing machine, comprising a stationary jaw, a movable jaw arranged to oppose said stationary jaw, a pitman actuated at its lower end by an eccentric device, a swinging yoke having one end connected with the stationary jaw and the other end connected with the upper end of said pitman, and a toggle joint connection between the movable jaw and the upper end of said pitman, said connection consisting of an arm rigid with the movable jaw but pivotally engaging the pitman, and the toggle joint being adapted to break joint both above and below the center during the up and down movements of said pitman.

863,851. Stone-Cutting Machine. Albert F. Jones, Salem, Mass. Filed May 25, 1906. Serial No. 318,609.

In a stone cutting machine, a stone holder consisting of stationary angularly arranged abutments for the stone, a corner block and longitudinally adjustable connections between said block and said abutments, substantially as described.

863,858. Unloading Attachment for Wagons. Wilfred Ledoux, Arnaud, Manitoba, Canada. Filed April 23, 1906. Serial No. 313,363.

In a device of the class described the combination with the wagon box having a curvilinear opening centrally and at the side of the bottom board, provided with a slant side, of a chute extending downwardly and outwardly from the opening, a slide plate designed to fit the opening and having access thereto from the side of the box, means for retaining the slide plate when in a closed position and means for preventing the grain from lodging between the slide plate and the bottom board, as and for the purpose specified.

## INCORPORATIONS

Baldwin Electric Light and Fuel Company, Baldwin, Wis.; capital, \$15,000. Incorporators: E. J. Case, O. K. Hawley and Herman Hubink.

Buckhorn Springs Water Company, Belvidere, N. Y.; to supply the town of Belvidere with water; capital, \$40,000. Incorporators: Jos. M. Rosbery, Silas Gibbs and others.

Conococheague Electric Light, Heat and Power Company, Markes, Pa.; capital, \$30,000. Incorporators: E. B. Duehl, Lehmansters; Seth Lemaster, Markes; D. F. Metcalfe, Mercersburg; John A. Diehl, Marion.

Eastern Paving Construction Company, Trenton, N. J.; capital, \$10,000. Incorporators: Charles A. Hickey, Vincent T. Coughlin and others.

Electric Safety Device Company, Pittsburg, Pa.; capital, \$60,000. Incorporators: John Murphy, James C. Gray, John A. Rogan and W. L. Murphy, Pittsburg.

**Empire City Iron Works, New York, N. Y.;** construct buildings, iron work; capital, \$10,000. Incorporators: B. T. Greenfield, 35 West 115th street; Charles Schindler, 100 Third avenue; Max Rodgur, 54 East 105th street, New York.

**Fall River Brick and Concrete Company,** Fall River, Mass.; concrete brick, etc.; capital, \$40,000. President, W. Davey, 18 Whipple street, Fall River; Treasurer and Clerk, F. M. Hunter, 361 South Main street, Fall River.

**Flick - Litchfield Construction Company,** New York, N. Y.; construct public and private works; capital, \$100,000. Incorporators: Percy Litchfield, Elletus D. Litchfield, Thirteenth avenue and Fifty-fifth street, Brooklyn; Don D. Donahue, Mt. Vernon, N. Y.

**Franklin Electric and Construction Company,** Pittsburg, Pa.; capital, \$5,000. Incorporators: H. J. L. Booth, Thomas G. Hodgdon and E. Zachausas, Pittsburg.

**William B. Lake Construction and Supply Company,** Brooklyn, N. Y.; real estate, building, contractors, trucking; capital, \$10,000. Incorporators: William B. Lake, Phebe N. Lake, John R. Lake, 2 Lake place, Brooklyn.

**Limerick Water and Electric Company,** Limerick, Me.; to furnish water, gas, electricity, etc.; capital, \$500,000. President, J. F. Moore, Newfield; Treasurer, C. G. Moulton, Limerick; Clerk, J. W. Lord, Limerick.

**Niagara Falls Lighting Company,** Niagara Falls, N. Y.; capital, \$100,000. Incorporators: James E. Rock, Niagara Falls; William J. Bagnell, Brooklyn; Arthur McCausland, John W. Searing, D. P. Berghelmer, New York.

**Oklahoma Fuel, Light and Power Company,** capital, \$3,000. Incorporators: James S. Cummins, T. H. Lane, R. J. Graf and I. Milkewitch, of Chicago, Ill., and Harry W. Davis, of Wilmington, Del.

**Charles Ramsey Company,** The Bronx, New York, N. Y.; manufacture machinery, hardware, etc.; capital, \$60,000. Incorporators: Charles Ramsey, 461 East 140th street, New York; Charles H. Rush, 442 134th street, New York; Edward D. Armour, 1577 Pacific street, Brooklyn.

**Shields-Chamberlain Company,** Hackettstown, N. J.; to manufacture bricks and building materials; Agent, Thomas A. Shields; capital stock, \$10,000. Incorporators: Thomas A. Shields, Emma E. Shields and Pierson M. Chamberlain.

**Suffolk Building Co.,** Boston, Mass.; contractors; capital, \$50,000. President, W. F. Stedman, 66 Patten street, Forest Hills; Treasurer, A. F. Macleod, 56 Spear street, Quincy; Clerk, G. M. Faulkner, 71 Chestnut street, Cambridge.

**Universal Sprinkler Company,** New York; manufacture fire extinguishers; capital, \$5,000. Incorporators: William E. Murphy, Raymond Colte, New York; Michael Kirtland, 2 Wall street, New York.

**Valley Transit Light and Power Company,** New Philadelphia, O.; capital, \$100,000; to construct a railroad between the cities of Canton, Dover, New Philadelphia, Newcomerstown, Coshocton, Newark and Columbus, and in the counties of Stark, Tuscarawas, Coshocton, Muskingum, Licking and Franklin. Incorporators: Michael Seibald, E. S. Rhoades, and a number of others.

**Van Bergh Electric Protection Steam Company,** New York, N. Y.; to introduce electric burglar alarm system; capital, \$100,000. Incorporators: Charles Tielennus, 13 Lafayette street; Frederick A. Ringler, 21 Barclay street; Katherine Van Bergh, 101 West 115th street, New York.

**Warner & Childs Company,** Cambridge, Mass.; agents and contractors; capital, \$10,000. President, A. F. Warner; Treasurer and Clerk, E. L. Childs, both of 28 Osborn street, Cambridge.

**Wells Island Light and Boat Company;** manufacture gas for lighting; capital, \$15,000. Incorporators: Walter F. Newton, James A. Morris, Island Park, N. Y.; Laurence M. Fitch, Rome, N. Y.

**Weyers Cave Light and Power Company,** Weyers Cave, Va.; to operate heating, lighting and power plants; capital, \$5,000. Incorporators: J. S. Sellers, President; N. L. Caney, Secretary-Treasurer, and others.

## Proposals

### SUBWAY AND APPURTENANCES

Department of Public Works.

Reading, Pa., Sept. 4, 1907. Sealed proposals will be received at the office of the City Clerk until 2 p. m., Wednesday, September 25, 1907, for the construction of subway and appurtenances under the P. & R. Railway tracks at Spring street, in the City of Reading, Pa.

Each bid or proposal must be accompanied by a bond executed by a trust company existing under the laws of the State of Pennsylvania, or authorized to do business in the State of Pennsylvania, or a certified check in the sum of \$15,000. And the successful bidder will be required to enter into a contract bond in the sum of forty per centum of the estimated cost; said bond to be executed by a trust company existing under the laws of the State of Pennsylvania, or one authorized to do business in the State of Pennsylvania.

Plans and specifications of the work can be seen and proposal bonds had at the office of the City Engineer.

All proposals must be endorsed "Proposals for the Construction of Subway" and addressed to the Board of Public Works, in care of Caleb Weidner, City Clerk, Reading, Pa.

The right is reserved to reject any or all bids.

By order of the Board of Public Works.

ELMER H. BEARD,  
City Engineer.

### STREET PAVING

Dallas, Texas, August 30, 1907.

Sealed bids or proposals will be received at the office of the City Secretary until 3 o'clock p. m. Friday, September 20, 1907, for the paving of Ross avenue and Main street, with one of the following materials:

- (a) Bitulithic pavement with concrete base, bitulithic pavement with bituminous base.
- (b) Sheet asphalt.
- (c) Natural rock asphalt.
- (d) Indian Territory rock asphalt.
- (e) Asphalt with binder course. The base of said asphalt pavements herein named shall be concrete base.
- (f) Bituminous material on concrete base.
- (g) Creosote pine blocks on concrete base.
- (h) Bois d'Arc Blockson, concrete base.
- (i) Bermudez asphalt, concrete base.
- (j) Vitrified brick pavement on concrete foundation.
- (k) Limestone curb.
- (l) Limestone gutter.
- (m) Combination concrete gutter and curb.
- (n) Concrete curb.
- (o) Concrete gutter.
- (p) Concrete gutter and limestone curb.
- (r) Brick gutters.

The city reserves the right to reject any or all bids. A certified check for \$2,000 must accompany any bid on Main street; and certified check for \$2,500 must accompany any bid on Ross avenue. Specifications for above work on file in the office of the City Secretary, Dallas, Texas.

J. B. WINSLETT,  
City Secretary.

### SEWER SYSTEM

Linton, Ind., August 21, 1907.

Bids are asked by the Common Council until 4 p. m., September 16, 1907, for constructing a sanitary sewer system for Linton, Indiana; the work consists approximately of thirteen (13) miles of sewer, with disposal plant; approximate cost, \$64,800.

FRANK SPELBRING,  
City Clerk.

### GARBAGE CREMATORY

Ft. Benjamin Harrison, Ind., Aug. 21, 1907.

Sealed proposals in triplicate for a garbage crematory will be received here until 10 a. m., September 13, 1907, and then opened. Full information furnished upon application. Right is reserved to accept or reject any or all bids received. Envelopes should be endorsed "Proposals for Crematory," and addressed to

GEO. H. PENROSE,  
Quartermaster, U. S. Army.

### STREET LIGHTING

Bids for Street Lighting Charleston, S. C., from June 30, 1908, for a Term of One, Two or Four Years

Charleston, S. C.

Sealed proposals will be received at the office of the City Electrician of Charleston, S. C., until 12 o'clock, noon, on November 15, 1907, for lighting the streets and public buildings of the City of Charleston, S. C., for a term of one, two or four years, with electricity, gas or some other illuminating power equivalent thereto, or partly by one and partly by another.

The estimate requirements are five hundred (500) arc lights of the inclosed type, to be supplied with an alternating current of not less than 6.6 amperes, under a pressure of not less than seventy (70) volts, and the electric energy of each lamp 475 watts, with an illuminating capacity of 1,200 (normal) candle-power. Gas to have five (5) foot burners, gas to be delivered at pressure of not less than 13 inches, and to be of standard commercial quality. Detail specifications of lighting will be furnished all bidders upon application to the City Electrician. Lights under this contract to be ready for operation on June 30, 1908. Certified check for \$350 to accompany each bid, and every bidder must be prepared to furnish a bond satisfactory to the Mayor to the penal amount of \$25,000, conditioned for the performance of his part of the contract, provided his bid is accepted. The city reserves the right to reject any and all bids.

ION SIMONS,  
City Electrician,  
Charleston, S. C.

Approved:  
R. M. MASTERS, Chairman,  
Committee on Lighting.

### WATER WORKS SUPPLIES

Office of the Board of Water Commissioners of the City of Los Angeles.

August 19, 1907.

Sealed proposals will be received by the Board of Water Commissioners of the City of Los Angeles, at the office of said Board, 440 South Hill street, up till 3:30 p. m. of September 30, 1907, for furnishing and delivering f. o. b. cars at Los Angeles, California, approximately 6,000 tons of standard hub and spigot cast-iron water pipe, as follows:

920 pieces 24-inch; 955 pieces 20-inch; 670 pieces 20-inch; 490 pieces 20-inch; 2,500 pieces 12-inch; 500 pieces 10-inch; 1,000 pieces 8-inch; 2,000 pieces 6-inch; 2,500 pieces 4-inch. Specifications can be obtained, upon application, from the Secretary, at 440 South Hill street.

A certified check for 5 per cent. of the amount of the bid, made payable to Jno. J. Fay, Jr., President of the Board, is to accompany each proposal, to be held as a guarantee that a contract with bond approved by the said Board will be entered into by the party whose bid is accepted, in accordance with the terms of the said bid.

The Board reserves the right to reject any or all bids, in whole or in part.

WM. MULHOLLAND,  
Superintendent.

### SEWERS AND LATERALS

Paducah, Ky.

Sealed bids will be received by Board of Public Works until 3 p. m. October 1, 1907, for constructing about fourteen miles of six-inch vitrified pipe and sewer laterals, ranging in depth from twelve to six feet. A certified check on some bank of the City of Paducah, payable to John J. Dorian, City Treasurer, must accompany each bid. The right to reject any and all bids is reserved.

L. A. WASHINGTON,  
City Engineer.

### WANTS

**WANTED**—A good sewer foreman; must be a thoroughly reliable man, capable of running reinforced cement job of sewer construction. Apply or write C. T. McCracken & Co., Charleston, W. Va.

**DRAFTSMEN**—Highest possible salaries for men experienced in any line of drafting; offices in 12 cities; any location desired; list of openings free. Hapgoods, 305 E'way, N. Y.

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WATER SOFTENING & FILTRATION SYSTEMS

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